The Bradshaw Lecture

ON

PROGNOSIS IN RELATION TO TREATMENT OF TUBERCULOSIS OF THE GENITO-URINARY ORGANS.

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MR. PRESIDENT AND GENTLEMEN,—The simplest method of securing a limited immortality is that which involves the periodical mention of the name of a beneficiary by speakers or lecturers. As long as the Royal Colleges of Physicians and Surgeons exist, and 3 per cent. consols bring in any income, and as long as men can be found to deliver lectures, so long must the name of Dr. Bradshaw be twice annually revived in London. I can imagine Dr. Bradshaw, if he was a cynic, in an exalted state of purity and wisdom, looking down complacently year by year upon those who undertake this task, watching them rack their brains for ideas during the summer months, or more likely feeling the prickings of conscience for failing in this duty. If he reflects upon his own peaceful life—not much worried with the cares of practice, not greatly embittered by the aggravations of public life—it may be hoped that he is grateful to those who thus vicariously keep his memory green.

Staying, as I often do, not far from Reading and knowing something of Andover, I have made some inquiries into his history, but already, though he died only 41 years ago, very little is to be made out concerning him. There is an aged member of our profession at Andover who still remembers him and an old retired tradesman there who knew him well. Speculation as to his birthplace seems to have remained unsatisfied; he was said to have dropped from the clouds and there were the usual rumours about exalted connexions; but I have discovered that he was the son of James Bradshaw of St. James's parish, Bristol. He was a man of some refinement and eccentricity, who wore his hair long and possessed a somewhat theatrical manner. He never did much practice, either at Andover or at Reading, though at the latter place there is a tradition that he incurred some odium by seeing patients for nothing at a chemist's shop. He is said by Sir James Paget, who may possibly have known him, to have been "a home-loving and studious man who diligently cultivated his mind in both literature and art." This is consistent with the fact that he was the possessor of numerous distinctions but, like his monument which I am helping to erect, they grew from a small basis. After studying at Westminster and Middlesex he passed the M.R.C.S. on Dec. 13th, 1833, being then 29 years old, and he was admitted a Fellow by election in 1854. In 1833 he also obtained the M.D. Erlangen, which was probably not a very serious ordeal. In 1841 he became an Extra Licentiate of the Royal College of Physicians, which means that he passed an examination of rather low standard by the President and "elects" giving the Licence to those who practised beyond seven miles from London. On the strength of this he was granted the M.R.C.P. during the so-called year of grace, 1859, without examination. In 1844 he matriculated at New Inn Hall, Oxford, at the age of 43 years, and was "created" M.A. in 1847 without any sort of examination. I cannot say where his degrees of D.C.L. and LL.D. were obtained but certainly not in England, and I commend this object of research to the next Bradshaw lecturer. He was a member of the Oxford University Art Society and an honorary member of the Royal Jennerian Society. He wrote papers on the use of Cod-liver Oil in Chronic Rheumatism (*Provincial Medical and Surgical Journal*, 1845); on the Operation of Narcotics (ibid., 1845); on a case of Chronic Abdominal Abscess (THE LANCET, 1846); on a case of Spontaneous Cure of Cercocele (THE LANCET, 1834); and on the History of Sheep (in *Oracle*, 1844), besides various articles in *The Miscellany* and other periodicals, signed "Beta." He married the widow of a rich jeweller in Andover whose money was left away in case she remarried; but Dr. Bradshaw and his wife bought the reversion for a sum down, and it was after this that he moved to Reading where he lived till the time of his death at the age of 62 years. Mrs. Bradshaw was many years older than her husband, whom, however, she survived for 14 years, and it is the bequest in her will, dated 1875 and proved in 1880, which places me in my present unhappy position; and therefore it is against her and not her husband that the grudge, if any, is to be entertained. Dr. Bradshaw himself it appears had offered to endow a pathological department in connexion with the Reading Hospital, but for some reason or another this was not accepted. At some period of his life he added a final "e" to his name which accounts for the fact that a doubt has arisen as to its correct orthography. It is thus spelt in an obituary notice which appeared in the *Reading Mercury and Oxford Gazette* of August 25th, 1866, in which we read: "With much regret we have to record the death of Dr. Bradshawe, of this town, which took place on the 18th inst. after a protracted illness. ..... The deceased gentleman had been a contributor of professional subjects and miscellaneous articles to various publications. He was a kind and warm-hearted friend, and during a residence of many years in this town he was ever ready to alleviate the sufferings of the poor by affording gratuitous relief, and by those his death will be especially felt."

The subject of this lecture seems small when contrasted with the larger themes of those distinguished men who have preceded me, but, besides its intrinsic interest, there is a wider one, because it opens up a whole question of the resistance of the human body to the attacks of the tubercle bacillus. It is instructive from this point of view to look back upon the accepted teaching with regard to tubercle in general at the time when I was a student. Although what were considered exceptional cases of cure of pulmonary tuberculosis came under the immediate cognisance of all, it was generally held that this was an almost invariably fatal disease. At the same time it was obvious that a large number of tuberculous affections in other parts of the body which were either imperfectly treated or not treated at all had a natural tendency towards recovery. I am speaking of about 1870, when the excision of tuberculous joints was a comparatively recent invention; when tuberculous glands were either left alone or, if they suppurated, were only incised; when lupus (which, however, at that time was not recognised as tuberculous) was only treated with nitric acid or the cautery; when nephrectomy was hardly thought of, and when few would have advised the removal of a tuberculous testicle. Many of my hearers must be old enough to remember that it was then, as now, not uncommon for tuberculous joints, if taken early and treated with absolute fixation and counter-irritation, to make almost complete recoveries; they will also remember how common it was to see people, otherwise in good health, whose necks were marked with the frightful scars caused by suppurating glands or resulting from the ravages of lupus, and that suppurating tuberculous testicles did not even frequently continue to discharge for the remainder of the patient's life. All this is, of course, perfectly well known, and yet the modern student is tempted, as the result of modern teaching, to overlook the fact that he often sees old cured tuberculous lesions in the post-mortem room—cicatrised lungs, calcareous glands, strumous kidneys, and the like—evidences of long past acute tuberculous trouble in patients who have died from some totally different disorder.

The modern teaching to which I refer, to put it baldly, is that if there is one obvious tuberculous focus and no evidence of any other it should be extirpated root and branch lest there should be left behind some root of bitterness from which the whole body may at some future time be infected. This teaching has no doubt much to be said for it, but the first part of the proposition must not be divorced from the second; and it is not only important to know whether there is at the time any active tubercle elsewhere, but also whether in the case of twin organs there is a reasonable chance of the fellow escaping, even although it be apparently healthy at the time the affected one is removed, and what the effect upon the system is likely to be if only one of such twin organs be left and it fall a victim subsequently to the attacks of the tubercle bacillus.

It is also interesting to recall the immediate effect of the introduction of the antiseptic principle upon the treatment of tuberculous affections of bones and joints. Before this

period the opening of a psoas abscess was in the majority of cases the signing of the patient's death warrant, and it was therefore postponed till the latest possible moment. In the same way the bursting of an abscess in connexion with a tuberculous joint was almost always the precursor of excision or amputation. Not, of course, that in either case the tuberculous process was aggravated; but because septic organisms entered in, like the seven other spirits in the parable, and the last state became therefore much worse than the first. But as soon as it was possible to eliminate or keep in check the septic element it was shown that tuberculous caries of the spine could be arrested and heal and cicatrise, at least as well when it communicated with a sinus leading to the surface as when no suppuration had taken place. And in the case of joints two methods of treatment were introduced, one by Lister and the other by König, which for a time had a considerable vogue but which have long fallen into disuse. Lister's plan consisted in making long and deep incisions into the pulpy synovial membrane, say, one three inches long on each side of a knee or an ankle, putting drainage-tubes across the joints and then trusting to complete fixation and rigid antiseptic treatment. König's was for tuberculous hydrops articuli, in which the synovial membrane becomes converted into a substance which he compared to boiled bacon rind. He made two long incisions, one on each side of the joint, and pulled out through each as much of the "boiled bacon rind" as he could get hold of but without making any attempt to remove the whole of it. The result was often excellent, and yet no attempt was made to remove the whole of the affected synovial membrane. I adduce these two examples, not that there is anything very remarkable in them, though they were remarkable enough at the time, but in order to emphasise two well-known facts—first, that it is not essential to take away the whole of the diseased tissue from a tuberculous part; and secondly, that by partial removal or simple drainage a degree of physiological usefulness may be retained which excision or amputation can never secure.

Doubtless it was not then, nor is it even now in these more enlightened days (with all respect to Sir Almroth E. Wright, to whose work I shall have later to refer), completely understood in what way the treatment led up to the cure. Formerly we spoke about the relief of tension, the removal of congestion, and complete immobilisation; now we have our attention directed to tryptic ferments and bacteriotropic substances. The problem remains a complicated one. The hypothesis upon which the treatment was founded was a different one from that which now explains the cure. At the present time the most important effect of the incisions might be held to be the removal of stagnant fluids from the source of infection and the douching of this infected focus with fresh lymph charged with bacteriotropic substances. These new ideas are intensely interesting, as indeed were the old ones, and few imagine that the last word upon the subject has even yet been said.

Let me now briefly refer to a few of the cases which have made me choose the subject of my lecture and begin by sadly owning that the only advantage of growing older is that one has reaped the fruits of the experience of what (in our short lives) we reckon as many years; and can therefore speak from personal knowledge in such a matter as that of the prognosis of a chronic disease.

I know a man, now aged 53 years, who enjoys almost quite good health and would pass muster in a crowd for a healthy man. He comes from a stock in which tuberculous disease has occurred rather frequently, but he himself was normal till the age of 34 years, when he suffered from left pleurisy and was treated by Sir Andrew Clark (whose name in this connexion will remind many of the extreme chronicity of some tuberculous affections and of the grand life work which a tuberculous man may accomplish). In the following year 1889 he came under my care for tuberculous epididymitis of the right side and I removed the testicle. This was followed in 1890 by caries of the sternum and in 1891, as is so common, by disease of the other testicle, which I scraped, leaving only a paltry fragment of the organ. He afterwards had tuberculous cystitis and degeneration of the prostate, an abscess about the right kidney, and symptoms of caries of the spine. The bladder was treated by rest and injections of nitrate of silver and iodoform, the abscess round the kindey by incision, and the sternum by scraping. No abscess formed in connexion with the spine but a certain amount of kyphosis ensued. Everything has now been in abeyance for eight or nine years. The remains of the testicle have enlarged so as to form a very decent approximation in shape and consistence to a normal organ and the prostate is not to be felt. The only obvious abnormality is the presence of a small amount of débris in the urine, in which, however, no pus cells and no tubercle bacilli are to be found. The patient can play two rounds of golf a day with comfort, can attend evening parties or church, and can hold his urine sometimes for three hours by day and for five hours in the early part of the night. So it must be owned that the result is not unsatisfactory.

One case only is as unconvincing as volumes of statistics, so I must ask your forbearance while I relate a few more. But I want to make myself understood as suggesting that they are not exceptional but rather common.

In 1897 I saw with Dr. S. Ringer a young lady, aged 19 years, who nine years previously had had tuberculous disease of the right hip from which she made a recovery with ankylosis of the joint. At the time she came under my notice she was suffering from tuberculous ulceration of the bladder of ten months' standing, which according to the teaching of that day, but I think rather against the wise instinct of my colleague, I treated by scraping and the application of iodoform. I do not think it did a particle of good and it led to the introduction of other organisms into the bladder besides the tubercle bacilli. But notwithstanding this the disease rather quickly subsided and the bladder symptoms disappeared. She became well and fairly strong and was able to enter with zest into the amusements suitable for a healthy young woman. For the last ten years she has been free from any tuberculous lesion and she leads an active life occupied with parish work, playing golf, and dancing. The urine is normal and guinea-pigs inoculated with it in October of this year were not affected with tubercle.

One of the earliest recollections and causes of wonder of my childhood is that of a boy, some years older than myself, with marked kyphosis from spinal caries. He was thoroughly well able to enjoy the pleasures of life, which included a Cambridge career and a shooting box in Scotland. He was twice married and had one child by the first marriage. Within a few years of his death, which occurred at the age of 46 years, he developed tuberculous epididymitis which suppurated. But the abscess, which was opened and scraped, healed and gave no further trouble.

There is a lady, aged 51 years, delicate certainly, but quite able to enter into the occupations of a woman of society, who has had renal symptoms for 10 or 11 years. I saw her five years ago and was able to place beyond dispute the fact that she had at least one tuberculous kidney. I expressed a very strong opinion against any operation being performed upon it, being led to this principally by the fact that the specific gravity of the urine was low (1012) and it contained one-sixth of albumin. This opinion was not shared by all her medical advisers, but it was followed, and the result fully justifies the course adopted as her health has much improved under ordinary treatment.

A strong healthy looking man, aged 64 years, a monorchid, after spending 14 years in China, returned home in 1878 and has enjoyed, he says, splendid health since. He was married in 1875 and has four children varying in age from 29 to 23 years. Four and a half years ago he squeezed his testicle in mounting his bicycle, which made it swell, and in two and a half months an abscess formed which he was told was not tuberculous. The sinus gradually closed. I saw him in February of this year and there was not any doubt about the diagnosis, as the epididymis, the lower part of the cord, and the vesicula were very hard and craggy and there was a small hydrocele. The diagnosis was confirmed by finding tubercle bacilli in the flocculent débris and mucus which were present in small quantities in the urine; and rodents inoculated with it died from tuberculosis. He rested for a few weeks and then returned to his country home, from which he comes up to business in the city—certainly not an ideal life, but it is his daily bread, and in spite of warnings he does not see his way to stop it. In the meantime he had gained seven pounds in weight when I last saw him in July and nothing is to be done to the testicle.

I know, of course, that some of these patients are walking on the edge of a more obvious precipice than the rest of mankind. Here, for instance, is a case I had hoped to bring forward as a striking case of chronicity.

A stockbroker, 34 years of age, came under medical care for irritability of the bladder, emissions, erections, &c., in 1896, at which time the urine contained pus and tubercle

bacilli. Irrigations were employed and the symptoms disappeared. The following year he was sent for a voyage and there was some thickening of one epididymis. He spent the winter of 1897–98 abroad and in 1899 one testicle swelled. I saw him in 1900 and found both testicles and epididymes much swollen, hard, and painless, and much induration of both vesiculæ seminales. The right kidney was much enlarged and hard. The urine had a specific gravity of from 1015 to 1010 and contained pus and occasionally a speck or two of blood and numerous tubercle bacilli, but no more albumin than the pus would account for. The only symptoms were slight frequency, especially in temperate as opposed to warm climates, and inability for very hard work, and occasional aching in the right loin. His appearance was robust. To summarise rather copious notes, this patient was allowed to return for short spells to his business in the summer but made to winter abroad and he went on very well indeed, the enlarged organs all becoming less obvious and the general health remaining good, though the urine became somewhat more albuminous. However, after working rather harder than usual his health showed signs of failure in 1904–05 and he could not pick up after an attack of influenza in March, 1905, and died unexpectedly from heart failure in June of that year—that is, nine years after he first consulted a medical man.

But as a contrast take this, the last case I will inflict upon you, of a medical practitioner, now 45 years of age, who is known to have had tubercle of the prostate and vesiculæ seminales in 1896 and on this account was sent to South Africa. His troubles had begun four years previously so that he probably had a tuberculous bladder 15 years ago. I must not enter into the details of his case, his two residences in South Africa, his attacks of pyelitis, and his final settlement in 1899 (at which time tubercle bacilli were still to be obtained from the urine) in the south of England, where he is still carrying on a busy practice. Not that he is robust, but he has lost almost all his bladder symptoms and there is no longer pus or blood in the urine. The urine, however, occasionally has an offensive smell which he subdues with urotropine. Its specific gravity is 1026. The only actual symptom is a dull ache in the right loin which does not prevent him from doing his work and he keeps in fair general health and nutrition. I saw him on Nov. 21st of this year and found him well nourished and with no obvious physical signs of disease in the kidney, bladder, or prostate.

I could produce many similar cases from my note-books, which are not those of a specialist but of what is called a mere surgeon. But, while stating my belief that tuberculous diseases of these organs are at least as chronic as, and perhaps even more disposed to undergo spontaneous cure than, those of other parts, I am aware that there is another side to the picture. Tuberculous disease of the bladder may cause intense trouble and exhaust the patient by the irritation which it produces; tuberculous nephritis with a blocked ureter may be a practically hopeless condition as far as the kidney is concerned and tuberculous affection of the Fallopian tube may give rise to dangerous and fatal complications.

I recall the case of a young man, aged 32 years, of tuberculous stock, whom I saw in 1895 with my late colleague, Dr. G. V. Poore, on account of polyuria and great frequency of micturition, his symptoms having been noticed for about six months. He passed urine every hour and the amount reached eight pints per diem; it had a specific gravity of 1002 and contained sometimes some small clots but always a little pus and tubercle bacilli. He had lost flesh but was leading an active life—hunting, and so on—and his friends almost resented the grave prognosis which we were forced to give, but he only lived a few months after our interview with him and is said to have died from tuberculosis of the kidneys.

I thought at one time that it might be possible to make a prognosis depending on the specific gravity of the urine but the problem is too complicated, there being so many other renal conditions commonly met with in tuberculous patients. I have, moreover, already adduced one case which is pursuing a calm and equable course, in spite of albuminous urine of low specific gravity. It is, indeed, most difficult to say which cases will go rapidly or slowly downhill and which are likely to remain stationary or improve: an important fact to bear in mind when we are asked to congratulate a surgeon upon the brilliant results of a single operation or even a dozen, for it would be generally possible to cap them with similar successes obtained by pursuing a Fabian policy.

Let us now proceed to consider very shortly what the diseases are which are under discussion. We may at once put out of consideration the miliary affections, because, although the earliest stage of a tuberculous lesion always consists in the deposit of miliary tubercle, it is not until one or other of the degenerative changes has set in that symptoms arise suggesting surgical interference; and it is from the point of view of the advisability and the nature of surgical interference that the question of prognosis is to be discussed.

Tubercle of the adrenals is such a medical disease that it may seem pedantic to refer to it in a surgical lecture. It is said always to be progressive, though its course is chronic, and always to give rise to Addison's disease. I can recall, however, two cases of surgical interest which alone would make me shy of operating when this condition was suspected. One was that of a middle-aged man who was under Lord Lister's care in 1888 on account of an almost acute abscess in the substance of the vas deferens as it lay in the inguinal canal; the vas and the testicle were removed and the latter contained a few grey granulations. He had had tuberculous testis as a boy and six years before the orchidectomy caries of the spine with psoas abscess from which he had recovered. His skin was bronzed. He died collapsed a few days after the operation and his adrenals were found to be enlarged and no doubt tuberculous. The other was a young man in the Brompton Hospital whose skin was deeply bronzed and who had enormous glands on one side of the neck, which displaced the trachea considerably to the other side. It was suggested that they were lymphadenomatous, but he went rapidly downhill, and at the necropsy all the lesions in the glands and adrenals were found to be tuberculous.

The conditions in the kidney which give rise to symptoms are the cheesy or calcareous degeneration of tuberculous deposits, or the breaking down of these deposits into abscesses which may or may not burst into or communicate with the pelvis of the kidney or the perirenal tissue. It is not common to meet with these conditions unassociated with more or less pyelitis, and pyelitis with a normal kidney is practically unknown. If the tuberculous deposits have simply undergone cheesy degeneration there is probably enlargement of the kidney; but symptoms may be almost entirely absent or very slight, such enlarged kidneys being sometimes discovered accidentally. Almost the whole of the kidney may be affected in this way, but on the other hand there may be one or several cheesy masses in a kidney the rest of which is comparatively healthy. The question of dealing with such a kidney if there are no urgent symptoms depends upon what views are held as to the likelihood of its being the only tuberculous focus in the body, and especially as to the probability of the other kidney being at the moment or in the future affected. It is unlikely that by the time the kidney can be diagnosed there will be no other deposits in the body and I am therefore opposed to nephrectomy from the point of view of eradicating all the existing tubercle from the system.

A word may here be said as to the sequence of events in the affections under discussion. It is certain that primary tuberculosis of one kidney occurs and that the other may escape for a long time, and it is, I think, also certain that the disease may spread down the ureter to the bladder. The fact that the early symptoms are often vesical does not prove that the bladder is affected at the time these symptoms appear, for any vesical symptom may be caused by a renal affection. Some go so far as to suggest that primary tuberculosis of the bladder only occurs as a part of tuberculosis of the prostate, but this I do not believe to be the case, and holding the view that it is a curable disease, I maintain that post-mortem evidence on the subject is likely to be deceptive. My own opinion is that it may spread from the bladder along the ureters to the kidneys in the same way as septic troubles do; but while this is an easy matter to argue about it is not a simple one to prove.

It is or may be possible by means of separators, or by means of catheterising the ureters, to ascertain whether the secretion from the opposite kidney has a respectable specific gravity and whether it does or does not contain tubercle bacilli; but such an observation does not settle the point as to whether or not there are any deposits of tubercle in the organ. There is, however, now no excuse for making the

mistake that I once witnessed in the early days of nephrectomy, of removing the only functional kidney. The remorse of the very sensitive surgeon to whom this happened is not easily forgotten. No change in the mental condition and but little in the physical occurred for several days and then, almost at the moment of the hospital visit, the end came suddenly with an epileptiform convulsion. But seeing that it is impossible to be sure of the state of the opposite kidney, and that it is likely, or at all events possible, that it will be affected later, and that the chance of life must be a poor one if there be only one kidney and that tuberculous, I am opposed to removing the obviously affected one which causes no symptoms, even if the evidence is against the presence of any disease in the other. It appears that there is a good chance of the unaffected kidney escaping for a long time or altogether if the affected one be not removed, which is an argument against the likelihood of one kidney being infected from the other and therefore in favour of letting the diseased one alone if it is not a source of inconvenience.

We come now to the question what is to be done when the symptoms are sufficiently severe to warrant exposure of the kidney. It is presupposed that an attempt has been made to ascertain the state of the other kidney and that, if its secretion does not suggest the absence of tuberculous disease, the cautious surgeon will always select the least serious operation. The kidney then is exposed and one of these conditions is found: pyelitis with a fairly healthy kidney; patches of tuberculous disease, possibly cheesy or calcareous, in a fairly healthy kidney with or without obvious pyelitis; a disorganised or atrophied kidney with probably extensive pyelitis. It may be a mere shell of renal tissue inclosing large collections of pultaceous cheesy matter (phthisis renalis). Such a kidney as the last I should, if the other kidney were supposed to be normal, unhesitatingly remove with as much of the ureter as I could get hold of, and hope that the patient might long be spared from the incidence of disease in the opposite kidney; and I should quite expect that there would be a considerable improvement in his general condition and that his resisting power might thereby be increased. As to the removal of the capsule, it depends upon the amount of thickening and adhesion to surrounding parts. If there be much adhesion the removal of the capsule involves much more hæmorrhage and shock. On the other hand, if left behind it does not in my experience do much harm. If the capsule be removed, however, it is far more easy to remove the whole of the pelvis and to deal with the probably diseased ureter. But if the disease were confined to localised patches of tubercle, and the remaining portions had a healthy or moderately healthy appearance, I should have faith in the recuperative power of the organ and should not be influenced by the—shall I say—sneers of some of the strong advocates of nephrectomy but should remove the diseased foci and bring the sides of the wound together with trustworthy absorbable catgut, putting a drainage-tube either down to the kidney or into the pelvis as occasion might require. This conclusion is arrived at not simply from reading what others have written but from the experience of such cases as the following.

A farm bailiff, 43 years of age, of robust appearance, had hip-joint disease as a boy which resulted in ankylosis with one and a half inches shortening. He also had keratitis, no doubt tuberculous. For some time he had complained of symptoms strongly suggesting stone in the right kidney, but on exposing the organ it was found to contain numerous cysts, some of which contained limpid fluid and others cheesy material; they occupied mostly the lower pole of the kidney and the remainder of the gland presented a normal appearance. The cheesy material was scraped away and the cyst walls so far as possible were cut away, which entailed the removal of about one-third of the kidney. A drainage-tube was inserted which was dispensed with on the eighteenth day. There was some shock after the operation and on the following day the urine contained 2·2 per cent. of sugar but, except for this, recovery was uninterrupted and he left the hospital on Dec. 2nd, 1906. When seen in November, 1907, he was in excellent health and had lost all his pain. He rides about his work and has no complaints. The lower end of the right kidney can be felt. There is no sign of active tubercle and no tubercle bacilli are to be found in the urine.

A railway porter, aged 24 years, was transferred from the medical wards with the diagnosis of calculous pyelitis; he was passing blood and pus which segregation showed to come from the left kidney, the urine from the right being normal. No tubercle bacilli were found in the urine and a skiagram showed a shadow. My colleague, Mr. R. Johnson, found extensive periadenitis and that the lower pole of the kidney was hard and nodular, partly caseous and partly calcareous. The affected part was cut away with scissors in the early part of April, 1906; the kidney was drained and the patient made a good recovery. I saw him on Oct. 10th, 1907. He looks and feels perfectly well; the kidney can be felt but there are no marked physical signs anywhere. The urine contains some pus cells but no tubercle bacilli were found. There is a little albumin. He has returned to his laborious occupation.

Perhaps these may be thought to be rather exceptional cases, but they are far from unique; and I believe the same arguments as to treatment apply to those in which there are one or a few abscesses. I always adopted the plan of opening and draining such abscesses before the methods of segregation had been perfected, chiefly from fear of the catastrophe referred to above, but also for the sake of estimating if possible the state of the other kidney; and the degree of success obtained seemed to me to justify the course pursued. Moreover, if what I have said about the chronicity of the disease and its tendency to become quiescent is true it is surely another and a strong argument for dealing in this unheroic manner not only with these cases but still more with those where the principal trouble is pyelitis. If there are no symptoms I have already said I would leave them alone. If symptoms are present I would drain for a time, unless, of course, the ureter is blocked, in which case it is almost certain that the kidney will be disorganised or atrophied and nephrectomy will be the only resource.

Amongst those who advocate nephrectomy as the ideal and practically the only operation for tuberculous nephritis is Krönlein. His paper in the *Archiv für Klinische Chirurgie von Langenbeck* (vol. lxxiii., 1904, p. 277), "Ueber Nierentuberculose und die Resultate ihrer Operativen Behandlung," is most interesting and carefully worked out, and represents admirably the views of those who hold an opposite view from mine. It deals with 51 cases, in 92 per cent. of which the evidence was in favour of unilateral affection, but his records go back to 1880 when the methods of segregation of the urine were rudimentary. He, however, agrees with the strongly expressed opinion of Israel that, in spite of modern improvements, it is impossible to be certain that the other kidney is free from disease. He, however, says: "We surgeons are all of opinion that tuberculosis in the overwhelming majority of cases affects first one kidney and the other later—often much later." And he points out that this is the opinion of a surgeon who sees his patients during life and is to be contrasted with that of the pathologist who sees them only after death. He thinks the kidney is usually affected through the blood stream. In his practice nephrotomy and partial nephrectomy have given place to complete nephrectomy which, to be what he calls typical, includes the removal of the capsule and he thinks it one of the most successful of operations. He considers that the presence of numerous other tuberculous foci or advanced cachexia forms no absolute contra-indication to nephrectomy. So long as it could be established or appear to be established, first, that the other kidney was intact and functionating and, secondly, that the principal trouble and immediate danger depended on the renal condition nephrectomy was, in his opinion, indicated. Of 34 nephrectomies, ten at the time of publication had died, eight of these deaths having occurred during the first year, one having survived seven years, and another 11 years. Of the remaining 24 no less than 14 had survived the operation more than three years and three of these more than nine years. Naturally the mortality was highest, 36 per cent., amongst the cases in which complications were known to exist. Of the 12 cases which were supposed to be uncomplicated not one died from the immediate effects of the operation and only one had subsequently died from tuberculosis (of the lungs, bladder, and kidney), and that after six years.

These results are striking and give matter for serious thought. It is open to the advocates of nephrectomy to say that such cases as those which I have described who have survived and "recovered" without nephrectomy might have done the same if the kidney had been removed and might have been saved the tedious process of convalescence. But, on the other hand, it may be replied that even the most successful cases of nephrectomy might have "recovered" without the operation and that those who died, certainly those who died from the immediate effects of the operation, might, and probably would, have had a longer lease of life

if they had been left alone. I am not a blind opponent of nephrectomy but an advocate for a very careful selection of cases, and I think that those who adopt this view will have a still smaller mortality to record than even these admirable results of Professor Krönlein.

From the surgical point of view it is useless to consider the tuberculous affections of the ureter as distinct from those of the kidney; from that of the pathologist it is interesting to note that the earliest changes consist in the formation of small submucous plaques such as are occasionally seen under the mucous membrane of the urethra; that these may go on to the formation of superficial ulcers or tuberculous growths which may completely obstruct the ureter and that the process is accompanied by extensive fibrous thickening of the outer coat. The result of this latter change also is the diminution of the lumen and sometimes of complete stenosis. This is, however, not the invariable nor indeed a very common result, but if it should occur it must lead to a hopeless disorganisation of the kidney or a permanent renal fistula. There is no proof that the earlier stages of ureteric tubercle can be recovered from, but the clinical evidence that this may occur is strong. It consists in the fact that after a patient has had symptoms and signs of tuberculous disease of the bladder and kidney there may come a time when no pus corpuscles and no tubercle bacilli can be discovered in the urine. If it be determined to remove the kidney and the ureter is found to be diseased it is undoubtedly wise to remove the latter as far as possible, which means rather nearer to the bladder in the male than in the female; but I cannot regard the removal of the vesical extremity with a corresponding portion of the bladder as anything else than a surgical feat and not one to be recommended for general adoption.

The subject of tuberculosis of the bladder is difficult to discuss, because it presents itself in such varied aspects and is often complicated, especially in the male, with disease of other parts of the genito-urinary tract. It is not, however, for the moment with these complicated cases that I am concerned, but with those in which the disease is chiefly, if not altogether, confined to this organ. And while admitting that there are cases where ulceration is considerable and involving the trigone and the neck of the bladder, in which the symptoms are very severe, I think that the more common type of the disease is one in which the only symptoms, except perhaps some failure of the general health, are frequently of micturition possibly accompanied by a certain amount of pain during or after the act, and the only sign observed by the patient is that the urine is thick. I call to mind many instances of young women who have endured this inconvenience for months or years without thinking it worth while to consult a medical man, and in whom the diagnosis has been made by a bacteriological examination of the urine. I believe that those of long experience will confirm the statement that if these patients are placed under good hygienic conditions and otherwise left alone except for the administration of various drugs such as urotropine and salol, which may or may not be of much service, many of them will pursue a very chronic course and the symptoms and signs will often very much subside or completely disappear. And probably many of the cases of simple cystitis which were in former days unexplained and which recovered or became mildly chronic were of this nature. Such, for example, is that of a lady now between 40 and 50 years of age, who had cystitis 20 years ago and who still suffers from a certain amount of frequency, but except for some neuroses is now in excellent health. A brother and two sisters have had pulmonary tuberculosis and a sister and a niece died from tuberculous meningitis, and therefore even if an examination of the urine at the present time did not reveal the presence of tubercle bacilli I should not be convinced that her original trouble had not been tuberculous cystitis. We must remember that it has been positively asserted, though by others it is denied, that tubercle bacilli may be present in the urine of persons with general tuberculosis who have no gross tuberculous lesion in the genito-urinary tract. Metchnikoff,[1] after summarising the evidence, states positively that micro-organisms, after their entrance into the refractory animal, are not eliminated by any of the excretory channels which serve for the elimination of many of the soluble poisons. Joseph Walsh,[2] on the other hand, brings forward strong evidence on the other side. Be that as it may, it is certain that none may be discoverable in the urine of those who have had tuberculous lesions of this nature, although pus or excess of mucous or epithelial débris may still be present. The persistence of turbi ity depends upon the fact that septic organisms are commonly present in the urine of those who are the subjects of tuberculous cystitis, which leads up to the observation that while it may be difficult to say what ought to be done actively in such cases it is easy to point out how many of the possible active treatments may do actual harm. First comes the question of catheter specimens. It is, of course, satisfactory to have a specimen of urine which is beyond suspicion, and it is often said that our methods of catheterisation are so perfect that there is no danger of introducing sepsis by this simple process. But how is the catheter specimen, as a rule, obtained? Is it not, if the patient be a female in the hospital, usually intrusted to a sister or a nurse? And can any of us say that we have never seen even in modern days sepsis started by catheterisation? Surely, not one of us. And once in, how almost impossible it is to eradicate these organisms. I believe, therefore, that in cases of tuberculous cystitis if the surgeon requires a catheter specimen he ought, if possible, to be himself responsible for obtaining it. And what is to be said about the use of the cystoscope? This is delicate ground, because I know how extensively it is practised and recognise the satifaction of making an exact diagnosis, and so I will only say this, that it is a surgical operation which demands the most scrupulous attention to all the details of antiseptic treatment. The days of draining the bladder, scraping the ulcers, and other heroic treatments are, I suppose, for the present over. Injections of nitrate of silver ($\frac{1}{8}$th gr. with water to one ounce) when frequency and pain are urgent and severe sometimes appear to do good, but, speaking generally, I believe that the more cases of simple tuberculous cystitis are left alone the better the prognosis will be. For the moment I am reserving the question of treatment by bacterial vaccines; but I think, with our present lights, that it should be employed on all suitable cases of tuberculosis of the bladder.

Tubercle of the testicle is more easy to write about because it is a common, tangible disease on which it is possible to form a definite opinion from personal experience. I have come to the following conclusions:—

1. That it is usually a chronic disease and that a majority of those cases which appear to be acute or subacute have been preceded by a slow enlargement of the organ which has escaped the attention of the patient. And this is based upon the facts that thickenings of the epididymis are often discovered accidentally and that in operations on the acute or subacute cases more extensive cheesy masses are usually met with than it is possible to suppose could have been formed since the apparent onset of the disease. No doubt the acute process does occur. I saw, for example, a policeman whose testicle enlarged rapidly as the immediate result of a well-known trick of the criminal classes whilst they are being arrested and became the seat of acute tuberculous degeneration; and I have also seen the disease very quickly developed in children, but I maintain that these are exceptional cases.

2. That it is so common as to be almost the rule for the second testicle ultimately to be affected, whether the first has been removed or not.

I have given up removing every tuberculous testicle, however quiescent, if no sign of the presence of tubercle could be found elsewhere, because it has so often led to disappointment, the patient returning before long with the opposite testicle affected. And from the same point of view I have always deprecated extensive operations upon the vas deferens and the vesiculæ seminales—not from the intrinsic difficulty of the operation, but because I do not think the idea of eradicating all the tuberculous material from the system by such a procedure is a reasonable one. I do not hesitate to remove one testicle which is completely disorganised, both body and epididymis, if it is causing much pain or inconvenience, and in such circumstances would take away as much of the vas as can easily be got at, but in most cases removal of the epididymis appears to be the better practice and equally efficacious. Thorough curetting often gives excellent results. And certainly if after orchidectomy the other testicle is subsequently affected it should not be removed but the obviously diseased portions should be cut away or scraped. The internal secretion of quite a small portion of the organ is sufficient to ward off the unpleasant

[1] Immunity in Infective Diseases, Cambridge, 1905, p. 46.
[2] Third Annual Report of the Henry Phipps Institute, p. 259.

results of complete castration, and the moral effect of an empty scrotum is not to be overlooked. I have already pointed out that even a small portion left by a partial operation may enlarge sufficiently to assume to the naked eye and finger the appearance almost of the healthy organ. It is interesting, however, in this connexion to note that while some men with undeveloped testicles, and all those whose testicles were removed in infancy, are obvious eunuchs, others retain their manly characteristics, especially, I think, if atrophy has occurred after puberty owing to mumps or other causes; also that removal of the ovaries even in young women is not always, it might be said not often, followed by the loss of the feminine characteristics, the growth of hair, and so on. Again, the method of castration of rams and bulls by bistournage or by crushing of the testicles does not, I believe, preserve the fierceness or the other male characteristics of the animals which have been submitted to these operations.

Tubercle of the vas hardly requires a separate notice, except perhaps to state that the enlargement and induration that so frequently are observed accompanying tuberculous epididymitis may, like other tuberculous processes, become smaller and practically disappear, but it may, as I have said before, give rise to an acute abscess. I should like also to mention the case of a healthy young officer who had a small, hard nodule either in the lower part of the vas or the epididymis which I took for a solid tumour. It was a small tuberculous abscess which I cut out. The wound healed perfectly, and whilst he was under observation, which lasted for a considerable time, there was no sign of any further tuberculous trouble.

It is well known that the vesicula seminalis is often indurated before the disease in the testicle has advanced beyond the early stage and before there is any obvious affection of the vas deferens. In the course of time the induration may disappear. Removal of the vesicula either by a posterior or a perineal incision is not difficult and is not to be recommended.

A very considerable deposit of tubercle may occur in the prostate without causing any symptoms whatever, and the process may go on almost to complete atrophy of the gland without giving rise to much or any trouble. But sometimes an abscess forms which may cause complete retention and, if it does not burst into the bladder, necessitate a perineal opening; or the deposit may break down and cause, or be associated with, ulceration about the neck of the bladder when great frequency of, and very painful, micturition may ensue. These cases are undoubtedly grave ones and if the patient is in a dilapidated condition from pulmonary or renal complication the pain and exhaustion which they cause may hasten his death. But even these, if no such complications are present, may under the milder forms of treatment settle down and become to all intents and purposes cured. The milder treatments consist in rest under the best hygienic conditions obtainable and the most approved local applications and sedatives. The more radical, if abscess has formed, consist in a perineal incision and possibly scraping the prostate, though this may be followed by a chronic urinary fistula. It is a long time since I have resorted to suprapubic drainage, and the results obtained from this once fashionable procedure were in my hands very disappointing.

I pass over tubercle of the urethra with the observation that I have seen it post mortem and that the appearances are very like those seen in the ureter, and with the mention of the case of an obviously tuberculous young man who contracted a gonorrhœa which no ordinary treatment appeared to influence. At last he informed me that he contemplated matrimony, which I told him was quite out of the question; but he paid no attention to my advice and he wrote afterwards to tell me that his wife was not affected and that he had had a healthy child, but I had no opportunity of following the case up.

I know practically nothing of tuberculosis of the external genitals, but it is a condition that is described in all monographs upon the subject and apparently is of the same nature as other tuberculous affections of skin and mucous membrane.

For the same reason—namely, lack of personal experience—I must pass rapidly over the tuberculous lesions of the uterus and ovary, merely mentioning that besides the miliary affections both small and large tuberculous masses have been met with in the ovaries. But there is one affection of the female genital organs to which more detailed reference must be made—namely, tubercle of the Fallopian tubes. Whatever view may be taken of the probable course of this affection, and that it may be very chronic all will agree, it seems at first sight to stand upon a footing of its own because, although dilatation is uncommon, there is undoubtedly a risk of the bursting of such a tube, especially if the infection be a mixed one, and of its giving rise to acute septic peritonitis; and from my personal experience I should have been inclined to advise that, as this risk is always imminent, the source of danger should be removed whenever it is diagnosed. Another argument in favour of this position is the fact that the chronic peritonitis which ensues is often the cause of matting together of the intestines and consequent intestinal obstruction, and that the longer this process goes on the more difficult it is to deal with. I am, however, informed that in Germany, and more especially owing to the teaching of Martin, opinion on this subject has been undergoing a change in the direction of that which I have been advocating with regard to tuberculous affections of other parts of the genito-urinary system. The tendency now is said to be to avoid laparotomies and the more radical operations and to treat these cases, when possible, by means of vaginal incisions. It is most interesting to me to hear of the advocacy of these views by so high a gynæcological authority as Martin.

So far I have hardly referred to opsonins, and have been discussing the prognosis and treatment as though the claim had not been put forward that many of the diseases with which we are dealing were amenable, and some indeed especially amenable, to the "opsonic treatment." Such is, however, the case and there is a large amount of evidence that tuberculosis of testicles, bladder, and kidneys have been successfully treated in this way. It is, therefore, evident that this is a question which we must all, both now and for a long time, most carefully consider and try to consider without prejudice.

I am a great admirer of Sir Almroth Wright, of his energy, of his original mind, his fertile imagination, of his unbounded enthusiasm, and I am conscious that my personal experience of the methods which he recommends is not yet sufficient in quantity or time to justify me in coming to a definite conclusion, and thus I feel almost ashamed of attempting to criticise even a small part of his work. Yet it must be owned that he rather seems to invite attack by the airy way in which he picks up merely to drop upon the scrap-heap such trifles as the antiseptic treatment of wounds, the removal of foci of tuberculous disease, the expectant treatment, and other methods which have been hallowed by time or which appear to have stood the test of experience. One rises from the perusal of the commencement of his lecture before the Harvey Society of New York[3] which I have read and re-read again and again, with the notion that instead of one or two workers at a hospital there should be a small army dealing with all cases of bacterial disease, and that, in the treatment of these conditions, the physician and the surgeon should stand aside after making a diagnosis while the miracle of cure is effected by means of bacterial vaccines. Although this is the general impression which this lecture produces I will allow that it is not quite a fair way of stating the case, because it is evident that he could not expect that bacterial vaccines can deal with, say, such an organ as a kidney or a knee-joint, which has been disorganised by a tuberculous or a mixed bacterial affection, though he does expect them to cure masses of cheesy if not calcareous glands.

I must not allow myself to comment on the statement that antiseptics are now by general consent abandoned in connexion with the treatment of ordinary surgical wounds; but I must make some observations on the last of the five methods which, in the lecture, he says "we have to-day at our disposal for the treatment of bacterial disease"—namely, the expectant treatment. Let me draw your attention to this sentence:—

> The really serious ills of life are the various *localised* bacterial infections which sooner or later fasten upon every man, never afterwards releasing their hold. It follows from this that a graver allegation is brought against the general value of a method of treating bacterial disease when it is alleged that such method has no application in connexion with localised bacterial processes, than when it is pointed out, as it has been here in connexion with the expectant treatment, that it is a method which utterly disappoints in many varieties of generalised infection.....
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> Now the graver charge of having no application in connexion with localised bacterial diseases may be brought against the expectant

[3] THE LANCET, August 17th (p. 423) and 24th (p. 493), 1907.

method of treatment. It is only, if I rightly apprehend the matter, in the case where life is threatened by the entrance of bacteria or bacterial products into the blood—and as we shall see later, not even invariably in that case—that Nature addresses herself in a serious manner to the task of immunisation. As long as a bacterial invasion is still strictly localised, Nature seems to oppose to it nothing more than a passive resistance. It follows that it is idle in connexion with localised infections to wait upon Nature and to expect from her any work of immunisation. I am wont to insist that the statistics of the expectant method of treatment in the case of localised bacterial infections are hardly more favourable than those of the Pool of Bethesda. You will remember, in connexion with that Pool, that an angel was wont to come down and trouble the waters *once* in seven years and that after that event the man who stepped down *first* into the waters was cured.

This is a striking simile, made all the more striking by the fanciful introduction of the seven years for which no support is to be found either in Holy Writ or in Baedeker. "At a certain season" are the actual words. One is inclined to ask why not seventy years or even seventy times seven. But, seriously, the question is whether the statement it illustrates is true; and I maintain that it is not. I appeal to the teaching of our great clinicians. Nay, I appeal to the experience of any careful observer who has been even a few years in practice. Is it or is it not a very rare thing for caries of the spine to be cured by rest and fresh air without the formation of an abscess; or for a tuberculous knee or hip to get well as the result of similar treatment? Do not glands that almost certainly contain tubercle disappear from view during a residence at the seaside? And is all that I have been saying about tuberculous diseases of the genito-urinary organs nothing but a myth? I sometimes doubt if Sir Almroth Wright's personal experience of these things can be so great as it undoubtedly is of the treatment by bacterial vaccines.

It must also be pointed out that the expectant treatment is not "committing the destiny of the patient—so far as that destiny is involved in the issue of his conflict with the invading microbes—entirely into the hands of chance" (I am quoting his own words), but consists essentially in feeding and nursing the patient and giving him the amount of rest which his case requires under the best hygienic surroundings And this treatment is usually going on *pari passu* with the treatment by bacterial vaccines. Not always, of course. One of my cases in whom the injections appear to have been of considerable service is that of a young man in a lunatic asylum who has tuberculous disease of the shoulder and of a metacarpal bone. His surroundings remain the same. It will be most important in estimating the value of the "opsonic treatment" to record most accurately the results in such cases, because it is otherwise so difficult as to be almost impossible to separate the effects of the two factors. For it must be remembered that the expectant treatment not only goes on *pari passu* with the opsonic treatment but that it goes on for a long time—it may be for months or even years. And if it were granted for the sake of argument that opsonins were the only weapons with which the body can combat and perhaps conquer the tubercle bacillus it is certain that there must be other means of providing this defence besides the periodical injections of tuberculin. Reflect, for instance, on another case of which I have notes and in which much improvement is recorded. It is that of a cellarman whose testicle swelled in July of this year and who now, instead of sipping his heel-taps in a cellar, spends his time reclining on a sofa by the open window, or sitting in Regent's-park with his scrotum in a suspensory bandage and drinking one or two pints of milk a day. I have seen subacute tuberculous epididymitis subside with even less care bestowed upon it than this. The patient had six injections of what was supposed to be $\frac{1}{10000}$ milligramme of tuberculin, but what I gather was really $\frac{1}{100000}$ milligramme, between July 21st and Oct. 4th. I take this opportunity of drawing attention to the note to Chart 1 in Wright's last paper,[4] from which it appears that the tuberculin with which he has been supplied in all his previous work has been one-fifth as strong as it was supposed to be. As I am told that all the tuberculin used in this country probably comes from the same source a similar correction must be made as regards all English work. It comes as rather a shock, though it makes the results all the more striking.

I now wish to refer to one or two other points that are stumbling-blocks to me. One is the lack of finality about the treatment. No one can watch the records without being convinced that so far as the changes in the opsonic index are concerned it is a true bill. If the injections be made wisely and not indiscriminately the results usually follow in due order. But the invariable, or at all events the common, thing seems to be that the index shortly goes down to the level at which it started, and one is reminded of the amazingly brilliant results which we obtained when Koch first launched his discovery upon the world. Chronic lupus of the face, mixed infection though it was, used to disappear as though by magic, but of course only to return when the treatment was stopped, and I want to know how long the treatment is to go on now. One supposes until the last tubercle bacillus has disappeared from the local infection. But how is one to know when the period has arrived? And must the injections be continued for an indefinite period after all physical signs have disappeared unless it is shown that the opsonic index remains steady within normal limits? Since writing this sentence the answer is supplied in the tables at the end of the paper just referred to. One must irritate the part and see if it modifies the opsonic index and go on with injections till this no longer occurs. I confess that this appears almost a counsel of perfection and I can appreciate the state of mind of a medical man of whom I have been told that, having a tuberculous family under his care, he proceeded to inoculate them periodically all round, for life one supposes, reminding one of Bernard Shaw's satirical suggestions of a dose of antitoxin three times a day before meals.

The second point is, that it so happens that in most of the cases which have recently come under my notice the opsonic index has not actually transgressed the limits of what is considered normal, and yet Dr. J. L. Bunch and Mr. D. Embleton, who have kindly undertaken the treatment of my cases and who have worked long and carefully at the matter, have not hesitated to make their injections when the index is not particularly high.

Lastly, there is the chance of error, the difficulty of obtaining uniform results and the really dreadful nature of the task. I have watched the process with awe—

> "Count, count, count,
> Till the brain begins to swim
> Count, count, count,
> Till the eyes are heavy and dim!"

and have thanked my stars that my duty does not lie that way. And thus, while fully recognising the value of the principle, one reads a paper like that of Simon in the September number of the *Journal of Experimental Medicine* with the hope that some simpler method, one less open to error and involving less labour upon the observer, may bring the matter more within the region of practical politics than it seems to be at present.

If I were to read out the actual results which I have obtained during this year, that is since I have been thinking about this lecture, it would, I am afraid, be too tedious for you to follow. The net result would not differ very much from those that have been published by others. In some there has apparently been more improvement than could have been expected from the other treatment that was applied at the same time. In others I could not satisfy myself that any influence was exerted upon the local condition, in two of them tuberculous testicles broke down and suppurated, and in one, a youth with cervical glands of such size and number and so adherent that I did not think it possible to remove them, the glands have certainly diminished much in size but he has developed pulmonary tuberculosis in spite of the fact that he has been undergoing a pretty complete open-air treatment. So that I am driven to the conclusion that it is impossible at present to promise uniformly good results, and I am far from convinced that the treatment by bacterial vaccines is destined to replace all other medical and surgical therapeutic measures. But at the same time I hope and earnestly strive to preserve an open mind, and shall continue if possible to carry out the treatment in suitable cases, especially those of vesical tuberculosis, while not omitting other forms of treatment that appear to be necessary. Above all, I shall try to remember what little things may, according to Wright, upset the opsonic equilibrium—a country walk, a little massage, a surgical operation, or some trivial excitement. The daily visit of a strenuous doctor might almost be expected to fortify his patient by increasing the output of opsonins.

Do I hear a murmur that this has been a wasted hour? That instead of reaping the combined wisdom of all the ages and all quarters of the globe one has been merely listening to the vague impressions of a single observer? That it is only necessary to cross the street to obtain a statement at least as positive of a diametrically opposite view? To such a complaint I can only answer that it would have been a simple matter—though no easy task—to collect oneself, or

[4] THE LANCET, Nov. 2nd, 1907, p. 1218.

by proxy, elaborate statistics of the precise incidence of these diseases at particular ages, of the proportion of cases in which post mortem one kidney is found affected without the other, of the proportion of cases of those dying from pulmonary tuberculosis in which some affection of the genito-urinary tract is met with, and a variety of other information bearing upon the subject. If anyone is seeking for this sort of knowledge I can tell him where it is to be found. The new edition of Professor Cornet's gigantic work, "Die Tuberculose," which has appeared this year, provides a monumental bibliography, of which no less than 15 pages are devoted to the urogenital apparatus—a truly glorious field for (original) research. I did, indeed, myself at first propose to try to make comparative observations on the records of, say, the Brompton Hospital, a general hospital, a children's hospital, a workhouse infirmary, and my private note-book. But I found on starting with the Brompton Hospital, the records of which might have been expected to be uniform, there had been such a complete change in the last few years owing to the different class of patients who are now admitted that I not unwillingly gave up the attempt, for which, indeed, it became at once obvious that an amount of time would be required which was not at my disposal. Moreover, the work has been done over and over again and is being carried out still, as is illustrated by an elaborate paper in the third annual report of the Henry Phipps Institute by Lawrence F. Flick on the Kidneys in Tuberculosis.

And after all what does all this knowledge lead to? It is really no satisfaction to a patient to know that such and such a mortality has followed nephrectomy for tuberculous kidney and that it has been reduced so much since such and such a year, or that of those who have had one kidney removed a certain percentage have apparently had no affection of the opposite kidney after so many years, while another definite percentage have exhibited signs of general tuberculosis. What he wants to know is what his particular chance is if he parts with his kidney, and still more he is anxious to know what are his chances if he does not submit to the operation. And this is a knowledge which no statistics can yield. Each case must be judged on its own merits and it is only experience that can justify an approximate answer to these momentous questions. If it were only possible for one surgeon to retain his vitality and his faculties for some hundreds of years, like Mr. Rider Haggard's "She," and, if it were thinkable, not to become stale in the meantime; or that it were really possible for a man of prolonged experience to hand it down to a young man so that he could actually start where the other has left off and not have to sow his wild oats before he begins to gather in his harvest, how we should all flock to such a one to help us in casting a horoscope. But that not being possible we must be content with slowly feeling our way; we must not be disheartened at the constant changing of views nor be disappointed that it is often necessary to "reculer pour mieux sauter."

When I remember, Mr. President, your great work in the subject of which I have chosen such a small portion for my theme, I hardly dare to bring it forward in your presence, and I am reminded of that sounding ode of Horace, which begins with the words:

"Pindarum quisquis studet aemulari."

The poet, you will recollect, in contrasting his work with that of Pindar, likens himself to the bee of Matinus:—

"Grata carpentis thyma per laborem plurimum."

The Dircæan swan you know, and the busy bee and the bank whereon the wild thyme grows. He assumes an air of the greatest humility and yet he seems to show a certain smug consciousness of the value and the longevity of his song. Perhaps I also may think my homily is not unimportant, though I expect for it no more than an ephemeral existence. These questions of treatment which at the moment appear of such vital importance to those who are considering them for the first time are, as all who have lived long enough to watch two or three swings of the pendulum know well, certain to be modified almost as soon as they are established, perhaps only to be revived again before the present generation has passed away. And casting the prophetic eye into the future, say a thousand years, say two, for what, as I said before is to prevent this painful spectacle from being repeated *ad infinitum*, it is impossible to believe that any of these earlier discourses, if remembered at all, will be thought of in later days as other than the miserable gropings after light of the people of a barbarous age.

Such as it is, however, this is my exiguous message. Such, O shade of Dr. Bradshawe, is the little stone, a mere pebble, which I cast in passing upon your monument of fame. But should it be the means of preventing one unnecessary or pernicious nephrectomy or preserve, to one poor wretch the internal secretion of his testicles, neither your bequest nor my labours will have been expended quite in vain.

ON SOME GASTRIC CONDITIONS IN WASTED INFANTS,

WITH SPECIAL REFERENCE TO HYPERTROPHIC PYLORIC STENOSIS.

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THE object of this paper is to suggest that in dealing with wasted infants we may by means of an analysis of the gastric contents gain some information as to the type of case with which we are confronted and some guidance as to the course of treatment most likely to be beneficial. As the result of a series of investigations we find that differences exist in the gastric secretion in various cases of infantile wasting and that these differences may be shown to correspond to three clinical groups: first, pure "marasmus" (which we may term "atrophic dyspepsia"); secondly, hypertrophic pyloric stenosis; and thirdly, cases of pyloric spasm unaccompanied by hypertrophy which we find to be cases of acid dyspepsia. These may now be considered for the purpose of comparing the clinical and chemical features of each group.

1. *Atrophic dyspepsia.*—It is difficult to say where the clinical condition known as marasmus starts or leaves off, but this group of cases will be recognised at once by a short description. As the result of prematurity, immaturity, insufficient or improper feeding, or frequently from causes which are difficult to trace, the infant wastes. There is a furred tongue with a tendency to diarrhœa and vomiting, and the most marked clinical feature is progressive wasting with no signs of any actual local disease. Post mortem no changes are found other than atrophy of the body in general and of the alimentary tract in particular.

This group of cases shows on examination of the gastric contents, as would be expected, a diminished activity of both acid and ferment secreting glands; there is no retention of food in the stomach and there is no mucin.

2. *Hypertrophic pyloric stenosis.*—The symptoms of this group are so well known as to require but a brief enumeration. Most usually in a male child vomiting starts in the first few weeks of life, most frequently from the second to the fourth week, and the vomits quickly become large in amount, forcible in character, and are accompanied by rapid emaciation. In some cases the infant is said to vomit from birth, but on inquiry it can usually be elicited that the child thrived well at first, and later, with the vomits becoming larger and more forcible, wasting set in. Constipation is usually marked, the stools being small and marble-like. The tongue is generally very furred. The physical signs are the definite gastric peristalsis and the palpable pyloric tumour; on these the diagnosis rests.

The contents of the stomach show, as a rule, a marked increase in the ferment activity, together with excessive secretion of mucin. There is also found to be very obvious retention of food in the stomach. The total acidity is variable but tends to be below normal, varying doubtless indirectly with the amount of gastritis present. It may be pointed out that after regular gastric lavage has been carried out for a short period the gastric contents begin to lose their abnormalities—the mucin becoming less in amount, the ferment activity diminishing, and the acidity at the same time more closely approaching the normal.

3. *Acid dyspepsia.*—This group shows some clinical differences from the others. The symptoms tend to occur in infants of three months or over and so to be later in their appearance as a rule than in hypertrophic pyloric stenosis. The vomiting is large in amount and may be rather

projectile in character and the bowels are usually constipated. The wasting is considerable, but as a rule much less than in the pyloric stenosis cases. The tongue tends to be clean. The abdomen is usually full, especially in its upper part, where on careful examination the stomach is found to be distended. On stroking or tapping the abdominal wall in the region of the stomach a dilated viscus is seen to "stand up" under the skin, but no true peristaltic waves are seen nor is the pylorus palpable.

On examination the gastric contents show an increase in their total acidity, the ferment activity being normal or below normal. There is no mucin present but there is obvious retention of food in the stomach.

Seeing that, unless vomited, the food tends to be retained in the stomach, that constipation is present, and that there is a demonstrable distension of the stomach, and further, bearing in mind the rôle played by the acid of the gastric juice in the physiological opening and closing of the pylorus, we are led to the conclusion that in these cases of acid dyspepsia we are dealing with the condition of pyloric spasm of which so much has lately been made. And here we wish to suggest that should further investigation confirm this conclusion, the term "pyloric spasm" should no longer be used to denote cases in which there is spasm without hypertrophy of the pylorus, but that for it should be substituted the name "acid dyspepsia of infants." This term has the advantages not only of suggesting the etiological factor and the line of treatment of the condition but in addition does away with a source of confusion that has arisen. For whatever opinion may be held as to the cause of hypertrophic pyloric stenosis of infants no one will deny that spasm of the pylorus is an important factor in the production of the symptoms, so that we have a point of similarity in two conditions which are otherwise dissimilar. For if we compare cases of hypertrophic pyloric stenosis with those of pyloric spasm without hypertrophy we find differences in the age and sex incidence, in the amount of wasting, the appearance of the tongue, in the gastric analysis, in the course of the disease, and, most important of all, in the physical signs; the true gastric peristalsis is not seen nor is the pyloric tumour felt unless hypertrophy be present. That there should be any confusion in the nomenclature of these two groups of cases is at the present time particularly undesirable; for some, holding that in hypertrophic pyloric stenosis there is a congenital over-development of the pyloric sphincter, have said that the cases which recover with medical treatment alone are cases of pure pyloric spasm and not of the same category as the true hypertrophic pyloric cases. In reply to this we may state that cases which we think there is a strong evidence to show are associated with spasm of the pylorus without hypertrophy, that is cases of acid dyspepsia, do not show the gastric peristalsis nor the palpable pyloric tumour When these two physical signs are present, but not until they have been found, the diagnosis of hypertrophic pyloric stenosis may be made with certainty whatever be the result of the case. Further, it may be said that those cases of hypertrophic pyloric stenosis which die under medical treatment die usually with diarrhœa, because the intestine has become too atrophic to deal with the food which passes into it when the pyloric spasm has become relaxed. The prognosis therefore depends much more upon the condition of the small intestine than upon that of the stomach.

From this last consideration it will be seen that every effort must be made to arrive at a diagnosis as early as possible in cases of hypertrophic pyloric stenosis. But although when the two typical physical signs are positive there is no longer any doubt as to the nature of the case, yet it must be admitted that the immediate diagnosis is often a matter of great difficulty and that prolonged watching is sometimes needed. It is in these cases that we venture to suggest that a gastric analysis might be of use in aiding the diagnostician; if in a wasted infant there is retention of food in the stomach with mucin in the gastric contents with a marked excess of ferment activity, we think that there is strong reason to believe that we are dealing with a case of hypertrophic pyloric stenosis.

On the value of a negative result we would not at present care to lay much stress, for we think it probable that only a well-marked case will show this excessive ferment activity; the retention of food in the stomach, however, with the presence of mucin should be regarded with great apprehension, for the acid dyspeptic cases are naturally extremely unlikely to show any mucin (the secretion of which tends to accompany gastritis and diminished acidity) and the atrophic dyspeptic cases do not retain food in the stomach in a way comparable to what occurs in the other two groups.

A gastric analysis might be of use in two other conditions where the diagnosis is less often in doubt. In some cases of abdominal distension there is fulness in the epigastrium and the question arises as to whether it is due to a distension of the stomach or transverse colon. In one such case seen the gastric analysis showed no hyperacidity and it subsequently became clear that the distension was due to the condition of the colon. In those rare cases of great dilatation of the sigmoid flexure in which left-to-right peristalsis may be seen at about the level of the umbilicus, we should imagine that hypertrophic pyloric stenosis might be excluded by this method of gastric examination.

We would emphasise that in all these cases the infant is wasted; we are comparing here the gastric contents of one type of wasted child with those of another and not with those of normal children. Also that we are dealing with infants under three or four months of age.

Methods of investigation.—Our method has been to give, not sooner than 24 hours after any previous gastric lavage, a test-meal of two or three ounces of diluted milk and to withdraw this after the lapse of 30 minutes. The withdrawal is easily effected by means of a tube passed through the mouth into the stomach (a No. 12 Jaques catheter answers well). The contents of the stomach are usually ejected through the tube, or failing this they may be sucked up by means of a syringe. On no account should any water be added in an attempt to syphon off the gastric contents; this, which is quite unnecessary, completely vitiates the accuracy of the subsequent analysis. A yield of one ounce is fully sufficient for the investigation. The total acidity has been estimated by the method described by one of us.[1] The ferment activity, estimated as rennin, has been measured by the method devised by one of us and which is about to be published. This may be easily carried out clinically. It consists in adding increasing amounts of the filtered gastric contents (from 0·01 to 0·5 cubic centimetre) seriatim to a number of test-tubes each containing 5 cubic centimetres of milk at 40° C. These are kept at this temperature for half an hour and are then examined. Clotting is said to be complete when the milk is entirely solidified, so that the coagulum does not fall out when the test-tube is inverted. The smallest amount of gastric fluid which will produce complete clotting of 5 cubic centimetres of milk at 40° C. in 30 minutes is taken to represent the ferment activity of the specimen. Thus in the following tables the lowest figure represents the highest ferment activity.

Results.—1. Quantity.—In cases of atrophic dyspepsia the stomach is usually found to be very nearly empty 30 minutes after such a test-meal has been given, so that to get a quantity sufficient for analysis a larger feed is generally necessary. In hypertrophic pyloric stenosis and in acid dyspepsia a large yield is obtained showing retention of food in the stomach. 2. Bile.—The absence of bile in the stomach contents has been suggested as a point in favour of the diagnosis of pyloric stenosis, but it has not been present in any of our cases of whatever type. Occasionally, even in true cases of pyloric stenosis, there is a slight yellow tinge to the gastric contents, but the tests for bile are negative. 3. Mucin.—Its presence is a strong indication of hypertrophic pyloric stenosis. It was found in each of our cases of this class and in none of the others. It furnishes evidence of the gastritis present in these cases. 4. Ferment activity.—This is diminished in the cases of atrophic and acid dyspepsia, but as a rule it tends to be increased in those of hypertrophic pyloric stenosis. Of this last group we have had the opportunity of investigating five cases, in four of which the diagnosis was verified post mortem. Representing the ferment activity by the numbers, the significance of which has already been explained, the results may be compared thus:—

Atrophic dyspepsia.	Pyloric stenosis.	Acid dyspepsia.
With 0·2 c.c. or more.	With 0·05 c.c. ,, 0·08 ,, ,, 0·1 ,, ,, 0·2 ,, ,, 0·5 ,,	With 0·2 c.c. or more.

[1] Willcox: On the Chemical Examination of the Gastric Contents, THE LANCET, June 10th, 1905, p. 1566.

Thus with one exception, to be referred to later, the ferment activity in the second group is greater than that in the other two and may be very excessive. 5. Total acidity.—

Atrophic dyspepsia.	Pyloric stenosis.	Acid dyspepsia.
Below 0·1 per cent.	0·069 per cent. 0·087 ,, 0·076 ,, 0·21 ,, 0·15 ,,	Above 0·1 per cent.

The pyloric stenosis cases are given in the same order in the two tables. It will therefore be seen that the ferment activity and the acidity tend to vary roughly inversely. These results may be tabulated thus :—

Class.	Quantity.	Mucin.	Ferment activity.	Total acidity.
Atrophic dyspepsia.	Small.	Absent.	Low.	Low.
Pyloric stenosis.	Large.	Present.	Usually high.	Variable (usually low).
Acid dyspepsia.	Large.	Absent.	Low.	High.

Some explanation may be offered of these changes in the pyloric stenosis cases. We look upon them as secondary in nature, not causing though tending to aggravate the condition. It may be supposed that the hypertrophy of the stomach wall is at first accompanied by an increased secretion of both ferments and acid, but that as gastritis is set up by the irritation due to the firm coagulum in the stomach the acid secretion tends to become diminished. In support of this is the fact that where the ferment activity is highest (i.e., the gastric wall is most hypertrophied) the acidity is diminished (i.e., the gastritis is most marked) and *vice versâ*. In the exceptional case where the ferment activity was low (0·5 cubic centimetre), post-mortem examination showed that the hypertrophy of the stomach wall was not so marked as is usual, the lower end of the œsophagus not being hypertrophied, and that there was remarkably little gastritis. For this reason we put no value upon the absence of excessive ferment activity for diagnostic purposes.

Treatment.—Over the bearing of the results of these analyses in the treatment of atrophic dyspepsia we need not delay. In acid dyspepsia the importance of alkaline gastric lavage together with the administration of alkalies, such as sodium citrate or bicarbonate, will be obvious. A few remarks may, however, be made on the medical treatment of hypertrophic pyloric stenosis in this connexion.

If experimentally gastric fluid from these cases is added to milk the excess of rennin is sometimes so marked that the milk coagulates firmly almost immediately. Although we have no doubt that by means of regular gastric lavage the spasm of the pylorus can be relaxed sufficiently to allow of food entering the intestine, yet if such coagulation of milk takes place in the stomach as can sometimes be seen *in vitro* it is reasonable to suppose that there must be set up renewed spasm, peristalsis, and probable gastritis. It would seem, therefore, that the best diet for these cases would be one of non-coagulable nature, such as a whey and cream mixture, citrated milk, milk powders, or even a milk treated with an antirennin preparation such as might be made from the serum of goats which had been given repeated subcutaneous injections of rennin.

Finally, we may emphasise the importance of giving the smallest practicable doses of food, for to get any large amount of food through into the intestines which are too atrophied to deal with it is but to run the risk of setting up a diarrhœa which may be fatal. Another danger of giving too large feeds is seen in all cases of wasted infants but particularly in those of hypertrophic pyloric stenosis where the stomach is so much dilated. The infant, although apparently doing well as the vomiting has diminished, gets an accumulation of several feeds in the stomach, has a very large vomit, collapses, and dies. This we think to be a very real danger and one to be kept in mind.

In conclusion, our thanks are due to the members of the staff of the Hospital for Sick Children, Great Ormond-street, for allowing us to make use of their cases, and also to Dr. Leonard G. Guthrie who very kindly sent us two specimens from a case of hypertrophic pyloric stenosis under his care at the Paddington Green Children's Hospital.

TWO CASES OF CONGENITAL DEFICIENCY OF THE MUSCLES OF THE ABDOMINAL WALL ASSOCIATED WITH PATHOLOGICAL CHANGES IN THE GENITO-URINARY ORGANS.

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DURING the last few years there has been described a number of cases in which have been associated a defect in the abdominal musculature and an abnormality of the genito-urinary apparatus. This curious grouping of defects, which occurs in greater or less degree in every case, renders the condition extremely interesting and is the excuse for the noting of the present cases.

The two cases to be described below are published by the kind permission of Dr. Charles Bolton, under whose care they were first admitted at the North-Eastern Hospital for Children. The first case was shown during life at the Clinical Society of London by Dr. Bolton and an account of it may be found in the Transactions of that society for 1905. The cases will first be reported and afterwards a *résumé* of the hypotheses which have been advanced to explain the condition, with any comment or suggestion which may appear practicable in the light of the present cases, will be given.

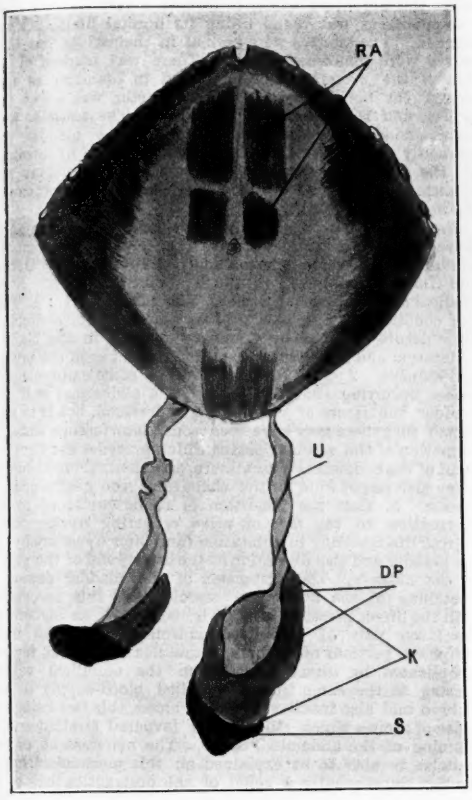
CASE 1.—The patient was first seen when three weeks old. The mother, who had had one miscarriage, had suffered from lack of food during the pregnancy, but otherwise this and the labour were uneventful. The patient was the youngest of a family of 11, of whom two died at three and eight months respectively from "wasting." The child was brought to the hospital because of the condition of the abdominal wall, seeming in other respects quite natural.

On admission the abdomen was somewhat distended and bulged out at each side. Distended coils could be seen, apparently under the skin; in the bulging lateral portions these coils were thought during life to be intestine, but subsequently examination after death showed that they were the distended ureters. Vertical folds of skin were present in the region of the umbilicus, and it was considered that these were due to the pressure of the binder which had to be applied constantly. The umbilicus was imperfectly formed; no discharge was present and no aperture could be detected. On palpation there was resistance in the middle line, and it was considered that the rectus was present, but at the sides where the bulging coils were visible the abdominal wall seemed to be formed of skin only, and the fingers could be pushed into the abdominal cavity and all the organs could be palpated with ease. A hard pyriform tumour was felt in the hypogastrium reaching right up to the umbilicus and becoming much smaller after the child had passed urine. The rectus could be definitely felt to contract when he cried, but the lateral muscles appeared to be absent. The left kidney appeared to be larger than the right; the liver and spleen were palpated with ease. The diaphragm moved normally. The muscles of the back and body generally were fairly developed. The testicles were not felt in the scrotum though one was doubtfully felt at the right external abdominal ring; the child had been circumcised, not because of a tight prepuce but because it was long. He was kept under observation for seven months and gained weight; at the end of this period he began to suffer from furunculosis which subsequently became generalised. This lasted over a period of two more months when there arose the complication of suppurative pericarditis to which he succumbed.

Necropsy.—At the post-mortem examination no other suppurative conditions beyond those mentioned were found, all the pathological findings being limited to the abdominal wall and to the genito-urinary apparatus. The musculature in

the abdominal region was found to be markedly defective. The rectus was represented by thinned muscle in the region above the umbilicus only, while, below, its place was taken by aponeurotic tissue. Both oblique muscles were to be found only at their costal and postero-lateral attachments; the transversalis was only barely represented by a few fibres in the upper portion. (Fig. 1.)

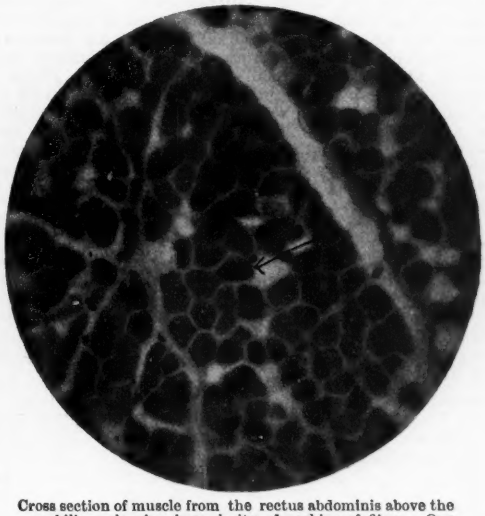
FIG. 1.



Drawing of abdominal wall of Case 1 with kidneys and ureters attached (to bladder). The shaded portions are very thin muscle fibres. The rectus is thicker. R A, Rectus abdominis. U, Ureter. K, Kidney with D P, Dilated pelvis. S, Suprarenal body.

Microscopical examination.—Sections were made from the rectus region, both above and below the umbilicus, and stained variously, but mostly with hæmatoxylin followed by van Gieson's stain. In sections taken from below the level of the umbilicus, practically all through the zone usually occupied by muscular tissue, was a narrow zone of loose fibrous tissue containing rounded and oval nuclei, which stained rather darkly and stood out in marked contrast to the elongated and irregular nuclei of the connective tissue proper. Some of these nuclei were surrounded by a more or less definite zone of protoplasm, the whole cell being of considerable size; a few of the cells had horseshoe or kidney-shaped nuclei but their general appearance did not suggest a vascular origin. Their exact nature was very doubtful but they did not appear to resemble the cells of muscle tissue which had undergone a regressive change. Scattered through the loose tissue above mentioned were little masses of fat. Examination of the abdominal wall in the rectus region above the umbilicus where the muscular tissue was visible to the naked eye, though thinner than usual, showed that the muscle fibres were unraturally rounded in shape and not so closely packed together as in the normal. The size of the fibres varied in size from 12μ to 25μ in cross section, the average size being slightly greater than normal, some of the fibres being definitely swollen. A few atrophied fibres were visible; these were of irregular shape, the myoplasm fibrils being widely separated, so that the fibres appeared irregularly refractile and coarsely granular in cross-section. Some of the fibres contained central nuclei and in a few two central nuclei could be seen in the section of one fibre. (Fig. 2.) Many of these larger fibres appeared

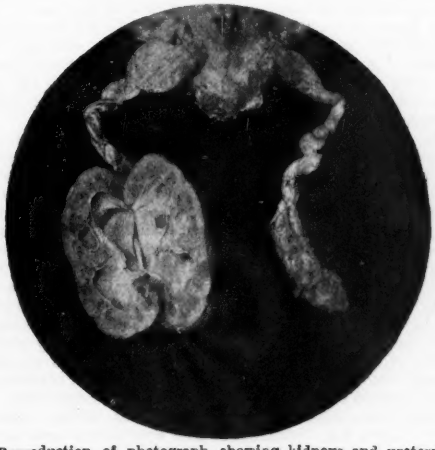
FIG. 2.



Cross section of muscle from the rectus abdominis above the umbilicus showing irregularity of packing of fibres. One central nucleus is seen in the middle of the field.

perfectly homogeneous and seemed to have undergone a slight degree of vitreous degeneration; this change is what might have been expected in muscles from a patient dying from some septic intoxication and is probably to be correlated with the attack of suppurative pericarditis. Still, excluding the presence of these changes, possibly of acute origin, the general sparsity of muscle fibres in the apparently well-developed parts, the absence of any definite nuclear proliferation in the rectus region below the umbilicus, and the absence

FIG. 3.



Reproduction of photograph showing kidneys and ureters. The larger kidney is that of the left side.

of any connective tissue increase such as would probably have resulted from the disappearance of already developed fibres, all would seem to indicate that the condition is an anomaly of early developmental origin. It must, however, be remembered that the sarcolemma sheath which with the sarcoplastic nuclei develops into fibrous or fatty tissue in retrogressive muscular changes appears only about the time of birth.

Kidneys and ureters.—The kidneys show marked inequality in size, the right being much smaller than the left, as shown in the accompanying illustration (Fig. 3). There was marked dilatation of the ureters and the larger kidney presented a great enlargement of the pelvis and the calyces; the capsules stripped with difficulty from the surfaces of the organs which showed fœtal lobulation; this difficulty of stripping was the more marked in the smaller kidney, which was very firm and fibrotic. Microscopically the capsule was thickened and here and there the fibrous tissue dipped downwards into the cortex while the substance of the kidney was traversed by strands of fibrous tissue; the glomeruli were not so numerous as normally and exhibited all grades of change right up to complete fibrosis. The orifices of the ureters into the bladder were exceedingly small as compared with the dilatation in the ducts above; moreover, they were surrounded by a mass of tissue which appeared to be more dense than elsewhere in the bladder; it was difficult to say whether there was a relative stenosis. The directions of opening of the ducts appeared to be normal.

The spinal cords from this case and that immediately to be reported below were examined as regards the number of cells in the anterior horns from the lower dorsal segments, and compared with similar Nissl preparations from the cord of a normally developed child of about three months old dying from some cause not implicating the spinal cord. The numbers of large and small cells in a series of five successive sections from the segments examined were counted and the results are appended below:—

	Normal.		Case 1.		Case 2.	
	Large cells.	Small cells.	Large cells.	Small cells.	Large cells.	Small cells.
7th dorsal segment ...	45	34	45	36	51	47
8th ,, ,, ...	62	48	43	37	45	39
9th ,, ,, ...	50	48	40	22	51	42
10th ,, ,, ...	50	44	38	27	48	39
11th ,, ,, ...	48	44	44	28	47	45

From this count it will be seen that one of the cases (No. 2) shows almost exactly the same number of cells as the normal cord, while the other shows only an insignificant reduction. The actual character of the cells shows no essential differences in the three cords examined.

CASE 2.—The patient, aged two weeks, was admitted to hospital on Oct. 17th, 1905, and died on the 28th. The mother was 30 years old and had had five children by a second husband; four of these were alive, one having died from bronchitis at the age of one month. The survivors were healthy and, with the exception of the patient, showed no abnormality or defect. Two children by her first husband died from "convulsions"; she had had no miscarriages. The labour in the case of the patient was easy and quite natural. The abdomen was noticed to be big at birth and on the fifth day the discharge of a clear fluid from the navel was observed, which discharge a few days later became blood-stained.

On admission the child appeared to be wasted, with sunken eyes and short hair. The cardiac sounds were normal, the apex beat being in the normal position; the chest was drawn up at each inspiration. The abdomen was flaccid and bulged, especially in the flanks, the skin lying in vertical ridges. In the middle line of the abdomen there was much more resistance than in the flanks—in fact, it was thought that the rectus was present, at all events, in the upper part; at the sides, however, the lateral abdominal muscles were considered to be absent, as in these positions the abdominal organs appeared to be directly under the skin, and when the child cried the bulging sides contracted markedly into the centre of the abdomen. A little fluid was seen appearing through the navel. The spleen, liver, kidneys, bladder, and urachus could be easily felt through the abdominal wall. The external uro-genital organs were normal, except that the testicles had not descended. The extremities were normal but wasted. On Oct. 22nd the discharge from the navel was definitely recognised as urine, and more urine flowed from the umbilicus than from the urethra. On the 28th the child died suddenly.

Necropsy.—At the post-mortem examination the thorax and limbs were found to be normal. The abdominal wall was thinned, especially in its middle portions, while the umbilicus was represented by a depression, and an opening was seen which was found to lead into the bladder. On dissection of the abdominal muscles the costal attachments and the iliac portions of the external oblique were present but were very thin; behind, near the latissimus, the intermediate part was present, but more internal it could not be seen; the aponeurosis passed from behind to the middle line; the external ring could be defined. The internal oblique muscle was present in the upper part and passed back from the ribs to the lumbar aponeurosis; it was absent at the attachment to the ilium and in the region where the external oblique was absent. The transversalis was represented by a few fibres in the epigastric region. The rectus was present and thinned from the usual upper limit to just below the umbilicus where it formed a very definite edge. The quadratus was found filling its normal limits but was thinned. The kidneys were normal in themselves but their pelves were somewhat dilated. There was marked dilatation of the ureters which increased in diameter as they neared the bladder, where their diameter was about two inches, and they showed convolutions. The testicles were undescended but otherwise normal. The bladder was markedly contracted and showed considerable hypertrophy of the muscular tissue. The urethra was patent and admitted a fair-sized probe. There was slight phimosis; the urachus was patent.

Remarks.—There are several views held as to the cause of these defects; these views have been summarised and the similar cases hitherto reported analysed in a paper by Garrod and Davies[1] published in the Transactions of the Royal Medical and Chirurgical Society, Vol. LXXXVIII.: 1. That the condition is due to a primary defect in the abdominal musculature followed by secondary changes in the bladder (dilatation and hypertrophy) and later changes in the ureters and kidneys. 2. That it is the result of some embryological defect occurring simultaneously in the abdominal wall and bladder, the nature of which is not understood, but it is suggested that there may have been some interference with the formation of the vascular plexus which precedes the development of the abdominal musculature, an abnormal blood-supply being also responsible for the changes in the genito-urinary system. 3. That the condition is to be explained by an obstruction to the flow of urine occurring during intra-uterine life resulting in dilatation (and later hypertrophy) of the bladder and also dilatation of the ureters and of the pelves of the kidneys. The distension of the bladder caused a stretching of the abdominal muscles, and this, associated with the direct pressure of the viscus, caused an atrophy of the lower part of the rectus muscle and of the more peripheral portions of the oblique muscles. This was further complicated by direct pressure on the umbilical vessels causing at the same time diminished blood-supply to the embryo and also inactive return of blood, this last being the cause of ascites which still further favoured stretching and thinning of the abdominal walls. The non-descent of the testicles is also to be explained on this mechanical hypothesis. Subsequently a relief of the obstruction has to be assumed and later a contraction and a folding-in of the anterior abdominal wall.

As regards (1) the defect may be placed in the muscles primarily or may be considered to be the result of an attack of acute anterior poliomyelitis occurring during intra-uterine life. The count and character of the cells in the anterior horns of the segments concerned are sufficient to negative such a view as this latter possibility. The microscopical appearances of the muscles examined in the present case would appear to suggest that the defect was of non-development rather than regression, and this was apparently so in the case of Garrod and Davies. Further, it is somewhat difficult to see exactly why the bladder should dilate because of the absence of the abdominal wall, unless we ascribe the failure of the abdominal muscles to develop as the cause of non-descent of the bladder, and this in turn making the ureters enter the bladder at an abnormal angle with resulting obstruction and secondary changes in the ureters and in the kidneys. In one case in the literature, in which a cystoscopic examination was undertaken, mention is made of a fold in the anterior wall of the bladder and displacement of the ureteral orifices which lay obliquely, and almost in a line; this particular relation changed after a laparotomy to set free the bladder from the umbilicus, and the ureters took up their usual position with regard to the bladder wall. Unfortunately it is not in every case that the bladder is attached to the umbilicus, though quite apart from this it is easy to conceive that the absence of the normal

[1] All the literature bearing on these cases will be found in their paper. I have not been able to find any similar case reported since their own.—G. H.

resistance in the abdominal wall would interfere with the descent of the bladder.

In the view (3) the assumption of a temporary obstruction to the flow of urine is extremely hypothetical and there are difficulties in the way. Although all the cases published have been of the male sex there is no evidence of any urethral obstruction; phimosis has been noted in some of the cases but only to a very slight degree. If the wasting of the abdominal muscles be due to stretching over a distended bladder it is difficult to see why only the lower segments should be affected while the tension must be equally distributed from ensiform to pubes. Moreover, in cases of ascites of extreme degree we do not meet with wasting in the stretched muscles. Again, if the change in the muscles be due to a pressure atrophy one would expect to find more definite results in the way of local reaction to the pressure, whereas no such are found; it is possible, of course, that the condition is so far advanced that these early changes have disappeared.

The ureteral and kidney changes need not be further discussed as they are quite clearly secondary results to the changes elsewhere.

A further consideration of the view (2) leads to the idea that it may be possible for both muscle and bladder changes to be due to a common cause of developmental origin, and that perhaps as the result of some vascular cause there arose a failure of a portion of the segmental development associated with a defect in the nature of an excess in the neighbourhood of the trigone of the bladder in that portion which arises from the hypoblast of the cloaca. Such a hypertrophy (which may have an analogue in the hypertrophy about the pylorus) might be associated with a relative stenosis of the ureteral orifices and a consequent dilatation in these ducts and in the pelves of the kidneys with still later secondary changes in those organs. Still, if this hypertrophy did occur we might reasonably expect it to occur alone without the constant accompaniment of deficiency in the abdominal walls.

On the whole the hypothesis of a defective development in the abdominal muscles which thus render no assistance to the descent of the bladder and allow an abnormal direction to the ureters at their entrance into the bladder, seems to be the most likely and to bring into line the condition of the genito-urinary organs with what appears to be fairly clearly a developmental anomaly of the abdominal muscles.

Newcastle-on-Tyne.

A CASE OF "CAISSON DISEASE."

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CAISSON disease is a condition so rarely seen that no apology is necessary for publishing in detail the notes of a case. It would perhaps be not out of place if in a few preliminary remarks reference were made to the causes of the disease and the means taken to prevent it.

The term "caisson disease" is applied to a series of phenomena to which workers in caissons and divers in deep water are liable—in fact, all workers in compressed air in whatever circumstances expose themselves to the risk of this malady. A caisson is a cylinder of steel sunk in water, the water being excluded by means of compressed air. A diver in a diving-dress like the "caissonier" is working in compressed air, the condition of each, when working, being therefore almost identical. The caissonier, however, does not work at such a high atmospheric pressure, but the exposure to pressure is of longer duration. The causes of the disease are first, too long exposure to pressure and, secondly, too rapid decompression. These two causes may be combined. By decompression is meant the gradual reduction of any pressure over and above that of one atmosphere. Certain means to prevent the occurrence of these causes have been adopted and the data that are now worked upon have been arrived at by exhaustive experiments on animals and by observations made during diving operations. The result of these experiments and observations has been such that the incidence of symptoms is comparatively rare and the diver can now work at greater depths and with more assured safety than heretofore. The duration of decompression should bear a definite ratio to the duration of exposure to pressure and to the amount of pressure. The most constant morbid phenomenon which has been observed at necropsies on men and animals is the presence of "bubbles" to a varying extent in the blood-vessels, heart, joints, and loose tissues. These bubbles have been demonstrated to consist of pure nitrogen. Their presence requires explanation. When a gas is in contact with a liquid under pressure the tendency is for the liquid to receive the gas in simple solution. Inspired air is practically in contact with the blood in the lungs and therefore when a diver is exposed to pressure the blood takes up an increased proportion of oxygen and nitrogen. So long as this pressure is maintained no harm accrues, neither does it if the pressure is gradually diminished. Should, however, the pressure be rapidly removed, or, in other words, should decompression be too rapid, the blood which was previously saturated tends to become hypersaturated. This tendency is overcome by the gases being set free in the form of bubbles—the carbon dioxide being eliminated by the lungs while the nitrogen finds its way into the circulatory system and loose tissues. To make this point clearer one may take as a simile a bottle of soda-water. Soda water, as is well known, consists of water into which carbon dioxide has been forced under pressure. So long as the cork remains in the bottle no bubbling occurs, but as soon as it is removed, or, in other words, so soon as the pressure inside the bottle approaches to that of the atmosphere, bubbles are given off in abundance. This is what happens to a too rapidly decompressed diver or caissonier, the extent of the bubbling depending on the amount of pressure, the duration of pressure, and the rapidity of decompression. The reason these bubbles are composed of nitrogen only and do not contain any oxygen or carbon dioxide is explained by the fact that whereas oxygen enters into chemical combination with the tissues or is eliminated in the expired air as carbon dioxide, nitrogen does not combine with anything. With these few preliminary remarks I will proceed to describe the case in detail.

The patient, a man, aged 49 years, was admitted to the Torbay Hospital under the care of Dr. J. H. Gough. He had been engaged as diver in the examining of torpedo-boat No. 99 which went down in 25 fathoms (150 feet) of water four and a half miles off Berry Head. He was an experienced diver and had made two previous descents on different days. The patient was admitted at 7.30 A.M. On the previous night he left the surface to go down to the wreck at 7.12 o'clock and owing to the fact that his lines were fouled by the wreckage he was not brought to the surface until 12.15 A.M. When it was found possible to raise him he was brought up to within 50 feet of the surface and then decompressed as indicated in the following table:—

Depth in feet.	Stoppages in minutes.
50	25
40	30
30	30
20	30
10	45

On coming to the surface he was so exhausted as to be unable to get on board without assistance. When his face-piece was removed he was able to answer questions and apart from the exhaustion did not appear to be much the worse for his immersion. He was covered with blankets and given hypodermic injections of ether and brandy. There were no signs of dyspnœa and his radial pulses were good. One hour later he complained of "bends" in the right arm and knees. These "bends" are a fairly constant sign of this malady and consist of bending of the limbs accompanied by pain. His hearing was unimpaired. The pains and "bends" passed off and he slept. On arrival at the hospital his condition was as follows. His colour was good but the expression was rather anxious. There was no lividity of the face or of any part of his body. He was able to take an intelligent interest in his surroundings and to make his wants known but he was quite deaf. Inspiration was deep and prolonged, expiration being short and shallow. His hands were very cold and the surface temperature generally appeared to be below normal. The temperature taken in the axilla was 97 6° F., the pulse was 114 (carotid), and the respirations were 32. With regard to the circulatory system no cardiac impulse could be seen or felt. There was slight dilatation of the right side of the heart. The heart sounds could only occasionally be heard and were then very muffled. No bruits were heard. Neither radial pulse could be felt nor was any pulsation palpable over the femoral, popliteal, tibial, or dorsalis pedis arteries. Pulsation was

easily felt in the carotids. There were no subcutaneous hæmorrhages and no epistaxis. As to the respiratory system, there was no dyspnœa. The chest moved well and equally on respiration and on auscultation no adventitious sounds were heard. The air entry was good all over the back and the front. There was no cough. With regard to the alimentary system, the tongue was clean and there was no vomiting. The bowels were opened slightly once but there was nothing abnormal in the stools. The patient suffered from great thirst and frequently asked for a drink. There was no dysphagia. As to the urinary system, urine was passed (about 12 ounces) one hour after admission; it was acid and contained no albumin or sugar. The specific gravity was 1025. As to the nervous system, there was no paralysis. The knee jerks were not easily obtained but were present. Sensation in the legs and trunk was unimpaired. "Bends" were absent. He did not resent a deep needle-prick made in his thumb and ear for the purpose of obtaining blood for examination. There were no pupillary changes. Examination of the abdomen revealed nothing abnormal. No particular inference can be drawn from the result of the examination of the blood as the circulation was so sluggish that considerable pressure had to be used before sufficient could be obtained. The result obtained was as follows: hæmoglobin, 102 per cent.; erythrocytes, 7,317,000; leucocytes, 8000; polymorphonuclears, 75·73 per cent.; large mononuclears, 6·54 per cent.; small mononuclears 15·73 per cent.; and eosinophiles, 2·0 per cent. The blood was very dark in colour.

Observations made up to the time of death.—His condition during the morning did not show any marked change. He made his wants known in a coherent manner and could understand questions written on a slate. In the early afternoon he complained of his ears and asked if nothing could be done to relieve his deafness. He also complained of some abdominal pain. He was rather restless and frequently shifted from one side to the other in an impatient manner. He continuously manifested anxiety as to his condition by saying, "Am I all right?" At about 7.30 P.M. his restlessness increased and he became incoherent. Lividity of the face was noticed but it varied in intensity and was more marked during the periods of restlessness, disappearing almost entirely during the quiescent intervals. Later the restlessness became of such a violent nature as to necessitate forcible restraint. He did not recognise his wife who visited him at about 8.30 P.M. His rectal temperature at this time was 102·4°. No further change was noticed until 11.30 P.M., when he appeared to become suddenly worse. His respirations were shallow, stertorous, and jerky, and he was comatose. His corneal reflexes were absent and his face was pallid. Oxygen was administered and artificial respiration performed but he died a few minutes after midnight. The radial pulses, though frequently looked for, were never felt nor could the heart sounds be heard at all during the latter part of the day. There were never any signs in the lungs, both bases being quite clear when examined shortly before death. During the last few hours there was profuse general perspiration. The legs and trunk were fairly warm, but the hands were from the time of admission very cold and later became cyanosed. It is possible that this may be accounted for by the fact that the sleeves of the diving dress fit very tightly round the wrists. That the circulation was very sluggish was demonstrated by the fact that repeated and deep punctures with a large Hagedorn needle caused no escape of blood without considerable pressure.

Treatment.—On admission he was given five minims of strychnine subcutaneously. This was repeated in three-minim doses two hourly for ten hours. Milk and brandy were administered by the mouth at frequent intervals. When the lividity appeared oxygen was given at short intervals, which minimised the lividity and decreased the restlessness, but the good effect was very transitory. A quarter of a grain of morphine was given in order to overcome the restlessness, if possible, and five grains of phenacetin combined with three of caffeine citrate to act as an antipyretic. Whether these drugs had the desired effect was never known, as he died shortly after their administration.

Necropsy (performed 15 hours after death).—Rigor mortis was well marked. There was well-marked post-mortem lividity at the dependent parts of the trunk, especially at the back and sides of the head, including the ears. The abdomen was very distended. (This was post mortem as no distension was present ten minutes before death.) There were no subcutaneous hæmorrhages. On making the usual incision the subcutaneous fat which was excessive was reddish and mottled in appearance, looking like fresh bone-marrow. It was also very greasy. On opening the peritoneum a light yellow oily fluid escaped which on investigation was found to have origin in the omental fat. The omental fat had the same characteristics as noted above with reference to the subcutaneous fat. The omentum was friable and had in places become closely adherent to the parietal peritoneum. The mesenteric vessels were obliterated by excess of fat. The intestines and stomach were distended with gas and the surface of the former was mottled. Numerous bubbles were found in the omental fat and in the veins on the surface of the stomach. Blood flowed freely from cut vessels and was dark in colour. Examination of the heart showed that there was a normal amount of fluid in the pericardium. The right ventricle was slightly dilated but not distended. There was excess of fat in the heart walls but apparently no fatty degeneration. Bubbles were well marked in the coronary veins. On dividing the innominate artery bubbles escaped. The right ventricle contained a large amount of dark, almost black, clot in which a number of bubbles were seen. The right auricle was full of clot but there were no bubbles. No bubbles escaped on division of the inferior vena cava. All the valves were quite healthy but there was slight atheroma of the aorta. The lungs were quite normal. No bubbles were seen in the azygos veins. A few were observed in the veins on the surface of the diaphragm. The liver was not enlarged and was normal in appearance. On section and pressure bubbles escaped from the cut surface. Four medium-sized stones were found in the gall bladder. The spleen showed nothing abnormal except that it was rather pale. The kidneys on section and pressure produced a few bubbles. The left renal vein contained a large bubble. With regard to the brain, on incising the scalp a large amount of dark blood escaped. The meninges and the brain substance were quite normal. No bubbles were found anywhere. The choroid plexuses and ventricles were normal. The spinal cord was not examined. No bubbles were found in any of the peripheral arteries. The right knee-joint was opened and a number of bubbles escaped with the synovial fluid.

Remarks.—The course which this case ran is unusual in that death was evidently caused by the gradual formation of bubbles combined with extreme exhaustion consequent on the patient's prolonged immersion. That bubbles should have formed at all indicates that the period of decompression, although so long, was not long enough. To have increased the duration of decompression would have been to expose the man to the very grave risk of death from exhaustion before he reached the surface. Had the presence of bubbles been manifested earlier recompression might have been resorted to, perhaps with success. As, however, he showed no serious signs of insufficient decompression until he was in the hospital it would have been an obviously ill-judged proceeding to have transferred him to the recompression chamber in the condition he was then in.

Such complete saturation at such great pressure as this man experienced is, I believe, unique.

I wish to take this opportunity of recording my indebtedness to Dr. Gough for permission to publish this case and also to Professor J. S. Haldane, Staff-surgeon O. Rees, R.N., and Lieutenant Damant, R.N., for much valuable assistance in the compilation of the same.

Clifton.

THREE SUCCESSFUL CASES OF OPERATION ON THE LABYRINTH.[1]

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IN these three cases the labyrinthine disease arose as a complication of chronic suppurative otitis media. Two cases I operated upon in the aural department at St. Bartholomew's Hospital this year (1907). They occurred in the practice of Mr. A. E. Cumberbatch and Mr. C. E. West, through whose kindness I was afforded opportunities of making the following observations. The third case, which I operated upon

[1] The first two cases were shown at the inaugural meeting of the Otological Section of the Royal Society of Medicine, Dec. 7th, 1907.

three years ago (1904), was that of a child under my own care in the aural department at the Evelina Hospital for Sick Children.

In the first case the outstanding clinical features were vertigo and partial deafness. During Mr. West's absence I performed the complete tympano-mastoid operation. A fistula was found leading from the tympanum through the fenestra ovalis into the vestibule. The external and superior semicircular canals and vestibule were extirpated with part of the walls of the Fallopian aqueduct, but the cochlea and facial nerve were left intact. The patient made a rapid recovery, being at once completely relieved of the vertigo and tinnitus.

In the second case the chief clinical features were otorrhœa, vertigo, and complete deafness. I operated on the labyrinth in coöperation with Mr. West during Mr. Cumberbatch's holiday. A fistula was found leading from the tympanum through the fossula rotunda into the vestibule. The cochlea and vestibule were completely extirpated with gouge and curette. In the histological preparation of the curettings of the labyrinth which I afterwards made the normal structures of the cochlea and vestibule were found to be entirely destroyed by granulation tissue.

The third case illustrates the operative treatment which was adopted for a labyrinthine fistula, unexpectedly found in the course of the radical mastoid operation. In this particular case there was a cholesteatoma in the antrum with a superficial mastoid fistula. The external semicircular canal was found to be eroded and the stapes was destroyed, giving rise to a complete labyrinthine fistula. The external and superior canals were extirpated and the vestibule was freely opened and drained. The patient made a complete recovery. The path of infection from the middle to the internal ear differed in each case. Cases 1 and 2 illustrate important points of technique in performing the operation for suspected labyrinthine disease when there is no fistula of the external semicircular canal. As regards the exploration of the outer walls of the vestibule as detailed in the note I should not like to be understood to advocate routine exploration with the vestibular probe except there be (1) vertigo of a definite type, and (2) constant and well-marked perosseous diminution of hearing.

CASE 1. *A case of vertigo due to a labyrinthine fistula through the fenestra ovalis; extirpation of the vestibule, superior and external semicircular canals, with preservation of the cochlea and facial nerve; recovery.*—A man, aged 33 years, was admitted to St. Bartholomew's Hospital on July 10th, 1907, with vertigo and headache and deafness in the left ear. The following history was obtained. The patient could not remember any discharge from either ear at any time, but he knew that he had been deaf in the left ear for many years. Two years ago (May, 1905) he had the first attack of vertigo, which came on suddenly, accompanied by vomiting, lasted about a week, and then passed completely away. After this attack the deafness in the left ear seemed worse, otherwise he had no complaint until quite recently. Two months ago (May 21st) the vertiginous symptoms returned as before, suddenly, with vomiting, and on this occasion with earache and headache too. He had not been quite free from giddiness since May, and had several severe attacks which caused him to fall. On June 26th he fell while walking in the street and was brought to the hospital by passers-by. This attack passed off and he was able to walk, and the patient was advised to attend the aural department, where he was seen by Mr. Cumberbatch, Mr. West, and afterwards by myself. Before admission to the wards he was examined on four occasions in the out-patient department, and the following particulars were noted.

Symptoms.—Headache.—The patient complained of headache which had been constant for seven weeks and was getting worse. He referred to pain in the suboccipital and mastoid regions. There was no tenderness on percussion.

Vertigo.—The patient described a sensation of the movement of visual objects transversely from left to right when in the erect posture. He stated that when walking in the street the houses would suddenly seem to move in front of him from his left hand towards his right-hand side and he experienced a feeling as if falling to his left-hand side. He was generally able to save himself. The giddiness was not confined to the daytime when he was up and about in the erect position, but he experienced similar sensations at night when lying full length in bed. As Mr. West showed, the giddiness was increased by pressing the tragus, closing the meatus suddenly when the head was erect.

Coördination tests carried out on July 5th.—1. Static.—Standing with feet close together and eyes closed the patient definitely swayed, first towards the left, and then recovered his position without falling, while the eyes remained closed. 2. Dynamic.—(*a*) Hopping on one foot with the eyes closed could not be performed without signs of unsteadiness, although the patient did not fall. (*b*) The patient was able to perform usual and some unusual coördinating movements but with some initial difficulty, when standing, whether the eyes were open or closed, but he could not jump backwards with eyes closed without falling.

Auditory sensations.—1. Conversation.—Right ear: ordinary conversation could be heard naturally but the patient described a sensation of hearing double—i.e., with echo; left ear: deaf to ordinary conversation. 2. Standard watch.—Right ear: 2 feet—i.e., about two-third normal acute hearing; left ear: contact only. 3. Tuning-fork.—The patient was not tested with a full range of forks. Weber's test: high C heavy fork, referred to the right side. Rinné's test: right ear positive; left ear negative. The patient stated that the same fork sounded different in quality in the left and right ears. Also when the fork was placed on the left mastoid the sound was louder and longer in the opposite ear, even when the left meatus was closed.

Otoscopic examination.—Right side: no abnormality discovered; left side: the pinna, mastoid, and meatus were normal. In the tympanic membrane was a large perforation, leaving a narrow crescentic margin below and Shrapnell's membrane above. The processus brevis was distinguishable but the handle of the malleus could not be seen. The inner wall of the tympanic cavity was visible and the promontory of the cochlea and the fossula rotunda were recognisable. In the region of the oval window was a small mass of granulation tissue. The vertical crus of the incus, the crura of the stapes, and the stapedius tendon could not be seen, the normal site of these parts being obscured by the granulation.

Examination with probe.—On touching the stapedial granulations the patient experienced a "boo-ing" sound but did not feel giddy.

On July 9th the patient complained that the suboccipital pain was increasing and he wished to come into the hospital for operative treatment which was advised. On the 10th he was admitted to the hospital.

On admission the patient was a sparely built, medium-sized man of ordinary intelligence. He walked into the ward. His temperature was 97·2° F. and his pulse was 64. Although sleep had been disturbed through the headache appetite and digestion remained fairly good. The teeth were bad; the tongue was moist and clean. The bowels acted fairly regularly. Micturition was normal. The urine contained no albumin or sugar; it was acid in reaction and of specific gravity 1012. The eyelids showed chronic blepharitis with slight ptosis; there was evidence of old superficial keratitis and vascularised right cornea. The irides reacted normally to light and accommodation. The movements of the eyeballs were normal. The visual fields and fundi were not examined. Adherent to the thyroid cartilage but not to the skin was a small cystic swelling, possibly originating in the thyro-glossal track. Apart from this nothing worthy of note was found. The thorax and abdomen were examined by the ordinary clinical methods of inspection, palpation, auscultation, and percussion. Nothing unusual was discovered. The neurological survey revealed nothing abnormal apart from what has been stated regarding audition and static sensation. No blood count was made, nor was the cerebro-spinal fluid withdrawn for examination.

Operation.—On July 12th I performed the radical operation on the left side, explored the fenestra ovalis, and extirpated part of the labyrinth. The details of the operation were noted by Mr. F. C. Trapnell, who assisted in the operation. The patient was anæsthetised with chloroform by Mr. G. H. Colt. The skin having been previously shaved around the left ear and treated with the usual antiseptics a curved post-aural incision was made from the upper end of the post-auricular groove, backwards and downwards towards the apex of the mastoid process. The pinna was turned downwards and forwards. The bone having been exposed by reflection of the periosteum the antrum was opened with gouge and hammer. The bone was exceedingly dense and hard. There were no accessory mastoid cells. The antrum was deep in position, small in size, and contained yellowish-brown cholesteatomatous material, but no pus or granulations. The tegmen was removed over a small area and the dura mater was found to be normal. The cerebellar dura mater and lateral sinus did not come into view. The aditus and attic were opened and the remains of the incus and malleus were extracted. On examining these ossicles the incudo-malleal articulation was found intact but the handle of the malleus and most of the vertical crus of the incus had disappeared. The remains of both ossicles were imbedded in granulations and cholesteatomatous material. The remnant of tympanic membrane was curetted away and the inner wall of the tympanum was carefully scrutinised. The eminentia arcuata externa was found to be intact and without signs of caries. In order to obtain a view of the fossulæ rotunda and stapedii the soft structures of the meatal canal were more strongly retracted forwards and part of the floor of the bony meatus was removed, together with as much of the posterior part of the annulus tympanicus as could be removed without jeopardising the facial nerve in its descent. The fossula rotunda was plainly seen but the oval window was hidden by granulations. On exploration with a bent probe the Fallopian aqueduct was found to be destroyed by caries close to the fenestra ovalis, where contact with the probe elicited a facial twitch on several occasions during the subsequent course of the operation. The crura of the stapes could not be seen, although the stapedial fossa was brought well into view. It was decided to explore for the foot-plate of the stapes in the oval window. With a fine vestibular probe the foot-plate of the stapes was sought for among the small mass of granulations obscuring the fenestra ovalis. No resistance was encountered and the probe passed by its own weight readily into the vestibule. I therefore determined to open the vestibule above the facial nerve. The external semicircular canal was first exposed with the gouge and the outer limb followed forwards; the superior canal was likewise opened and the outer limb followed downwards. The intervening bone between these canals which formed the outer wall of the ampullæ was chiselled away. This gave a free entry to the vestibule above the Fallopian aqueduct. A probe could now be passed into the vestibule and out through the oval window, appearing below the facial nerve. The upper opening into the vestibule was still further enlarged by removal of the intercanalicular portion of the petrous but without opening the posterior semicircular canal which was left intact. On account of the caries of the stapedial wall of the aqueduct the whole of the osseous canal between the geniculate ganglion and the posterior pyramid was removed, leaving the facial nerve intact within its sheath. The nerve was drawn appreciably aside, enabling one to use a small curette to the lower and anterior margins of the carious oval window, the upper and posterior margins of which were completely removed with the corresponding part of the Fallopian aqueduct and outer wall of the vestibule. To reduce to a minimum the risk of ascending perineural meningeal infection the vestibule was swabbed with carbolic acid (1 in 20). The cochlea was not extirpated. The plastic stage of the operation consisted in turning up a post-meato-conchal cutaneous flap, from which the cartilaginous tissues were dissected. The post-aural wound was sutured. The cavity was drained by a large, short rubber meatal tube, with a strip of gauze saturated in biniodide of mercury (1 in 4000) passing down to the Eustachian tube, with the object of avoiding, as far as possible, any ascending infection from the pharynx. The wound was dry dressed and the patient was returned to bed. The operation, which lasted one and three-quarter

hours, was well borne. The facial nerve was preserved intact throughout the operation.

Subsequent course.—The patient showed evidence of commencing recovery from the anæsthetic about six hours afterwards. He vomited during the first 24 hours but not after that. The day following the operation he could close the left eye, but he could not do so tightly, and the mouth was drawn a little to the right side. The facial paresis increased during the next few days to complete flaccid paralysis of temporary duration. 36 hours after the operation the patient felt very much better. He stated he was absolutely free from pain and from the giddiness which had previously troubled him for nearly two months, and which he had experienced even when lying in bed. He no longer heard continual noises in the left ear and the sensation of hearing "double" in the right ear had disappeared. The ear was dressed daily after the operation. There was no variation of consequence in pulse-rate or temperature, the former being about 70 and the latter below 99°. On July 19th the patient sat up without experiencing giddiness. While the ear was being dressed he was delighted by unexpectedly hearing bedside conversation in the left ear with the right ear closed. The hearing further improved after drying the vestibule and the fossula rotunda.

Auditory tests.—On July 25th the patient was tested with tuning forks while he was up and able to walk in the ward. With the high C (heavy fork) right side aerial conduction was 30 seconds longer than aerial conduction on the left side. Right perosseous conduction was 15 seconds longer than perosseous conduction on the left side. Rinné's test was 12 seconds positive in the right ear and 12 seconds negative in the left. Both ears were examined with open meatus. With the low C (medium weight fork) sound by aerial conduction in the left was imperceptible. Perosseous conduction was five seconds shorter in duration on the left than on the right side. The standard watch was heard over 2 feet from the right ear, i.e., over two-thirds approximately, and about 2 inches from the left ear, i.e., $\frac{1}{12}$ approximately. Conversation was distinct in the right side and perceptible and understood in the left, but had a "muffled" quality.

Coördination tests.—With the eyes shut and the feet close together the patient always and would have fallen backwards and to the left had he not been held up and prevented from falling. On the 30th the patient had recovered power of regulating muscle movements and could stand perfectly steadily with eyes shut. The cavity had healed satisfactorily and was almost completely epithelialised, and in November the face began to recover rapidly.

CASE 2. *A case of vertigo and complete deafness due to labyrinthine disease associated with a fistula through the fossula rotunda; extirpation of the cochlea and vestibule; preservation of the facial nerve; recovery.*—The patient, a female, aged 20 years, was admitted to Stanley Ward, St. Bartholomew's Hospital, on June 4th, 1907, suffering from headache and pyrexia, associated with otorrhœa. The following history was obtained. The patient had had bilateral otorrhœa since the age of two and a half years. She had *not* had measles, scarlet fever, diphtheria, or influenza, but had been subject from infancy to feverish colds in the head. Three years ago the deafness became much worse than formerly, especially in the left ear. In November, 1906, after several months' treatment as an out-patient, I performed Stacke's complete radical tympano-mastoid operation on the *left* ear. There was nothing unusual about the operation. The cavity behaved normally. While in hospital at this time the patient complained of pain and discomfort in the opposite—i.e., the right—ear, for which she continued to be treated as an out-patient during January and February, 1907. She frequently complained of giddiness and so-called "fainting" attacks. In February, while walking in daylight, she became suddenly so giddy she fell down. In March, 1907, the complete operation was performed on the *right* side. The dura mater of the middle fossa was exposed over the antrum. There was no erosion of the external semicircular canal. The inner wall of the tympanum and promontory of the cochlea presented what was thought to be a normal appearance. The stapes was not viewed and at this operation the fossula rotunda was not explored; granulations were curetted from the tympanum. The cavity epithelialised, except in the tympanic region, where granulations persisted and otorrhœa continued. During April and May the patient was again treated as an out-patient. Early in May, four weeks before her third admission to the hospital, she complained more of giddiness and of having fallen down several times—e.g., six times in two days. After the giddiness and so-called "fainting" she would be sick. She was giddy when lying in bed, as well as when up in the erect position, whether the eyes were open or closed. The room would seem to revolve from her right side when erect but when lying down she could only describe the giddiness in general terms. One month ago the appetite began to fail. The patient became paler and began to lose some flesh. Hitherto she had been very stout. Headaches became frequent and disturbing, especially at night. There was occasional vomiting. One week ago there was pyrexia. The mouth temperature was 101·2° F. The tongue was coated with a diffuse moist fur. The headache increased. The night before her third admission to the hospital the patient had a rigor. A medical man was sent for at 2 A.M. and advised removal to the hospital. The patient was brought to the out-patient department by her mother and was able to walk.

On admission the mouth temperature was 102° and the pulse was 120. Otoscopic examination showed that on the right side the meatal canal contained pus and granulations protruded from the deeper parts of the cavity. Elsewhere the cavity of the radical mastoid operation was dry. There were no other external signs of disease. The chest and abdomen were natural. The urine contained no albumin or sugar; it gave an acid reaction. The movements and reflexes of the eyes were natural. The movements and reflexes of the extremities were natural.

The patient was operated upon the same evening. I reopened the post-aural wound and found the cavity of the previous operation filled with granulation tissue. The tegmental dura mater was found exposed, its surface being covered with granulations. The bone was removed to expose a larger area of the dura mater over the lower border of the outer surface of the temporo-sphenoidal lobe. The dura mater of the posterior cranial fossa was found to be normal. No extra-dural abscess could be found and the lateral sinus was normal. Having regard to the persistent headache, vomiting, and raised temperature in the absence of evidence of lateral sinus infection or of extra-dural abscess and seeing that the tegmental dura mater was covered with granulations it was decided to make an immediate intra-dural exploration without waiting for further developments. This was done with negative results. Nothing abnormal was found in or on the surface of the temporo-sphenoidal lobe. The cerebellum was not explored nor was the cochlea or vestibule further inspected. The wound was packed with gauze and dry dressed. No sutures were applied. The plastic stage was deferred.

The patient rapidly recovered from the effects of the operation, but the temperature did not reach normal until a week later. Nothing could be discovered to account for this slight pyrexia. On June 6th the wound was dressed for the first time; it was found to be clean. The brain pulsations were visible. A leucocyte count showed 14,000. On the 7th the patient was stated to be noisy and restless in the night. The eye grounds were natural on both sides. A note by Dr. J. Calvert is as follows: "No headache. No vomiting. No optic neuritis. No paralysis of cranial nerves. Limbs natural; and no definite signs of extension from the ear."

Plastic operation was performed on June 11th. The dura mater was found to be covered with granulations. The post-meatal wall of scar tissue was turned up as a concho-meatal flap and packed in place with gauze through the meatus. The post-aural wound was sutured. On the 16th the post-aural wound had healed.

Throughout July the cavity gradually epithelialised and became dry except for muco-pus in the tympanic region. The patient was up and about in the open air and did not complain of pain. She took her food and slept well. She, however, complained again of giddiness and on three occasions fell down in the ward. It was not easy to say whether the symptoms conformed to a regular labyrinthine type of vertigo owing to the difficulties associated with the hysterical temperament of the patient.

Hearing tests (July 25th).—Weber to left. Rinné's test was negative on the left side. Right aerial and perosseous were *nil*. Left aerial was *nil*.

Coördination tests (August 6th).—1. Static.—The patient swayed irregularly with eyes closed. 2. Dynamic.—She was afraid to walk alone, even with eyes open; when assured that she would not be allowed to fall on attempting to walk along a straight line she exhibited a definite tendency to fall towards the right side. She stated that she felt giddy, objects appearing to move to the left, and she experienced a personal subjective sensation of falling towards the right side. For about three weeks the temperature had been irregularly intermittent, with hourly records the variations having been lately as much as from 99·6 and 102·2°. The pulse was slower in relation but varied thus—68 and 96. It was not full or bounding. The patient complaining of some pain over the right parietal and mastoid areas. There was no tenderness on percussion.

The operation on the labyrinth—On August 9th the post-aural scar on the right scar was incised, exposing an epithelialised cavity, common to the meatal canal and original mastoid operation cavities. The dura mater of the temporo-sphenoidal lobe was covered with epithelium and sagged down into the cavity, obscuring the tympanic region. The upper flap of the recent plastic operation was excised to gain a view of the tympanum. The floor and the anterior wall of the osseous auditory canal were also removed. The parotid gland was then drawn forwards with a retractor and the brain was retracted upwards and backwards. This gave a satisfactory view of the inner wall of the tympanic cavity. The external arcuate eminence was found to be intact. The crura of the stapes were absent. Granulations occupied the whole of the sulcus between the promontory of the cochlea and posterior wall of the tympanum (proper). The anterior margin of the fossula rotunda was readily identified. A vestibular exploring probe was passed to the oval window and met with slight resistance, without entering the vestibule. The facial canal was found open inferiorly at the stapedial curve. The probe entered the fossula rotunda almost by its own weight, passing directly into the vestibule. On closer inspection the surface of the promontory of the cochlea, instead of being white and smooth with channels for vessels and nerves, appeared flattened, was fawn coloured, and slightly pitted. With a small gouge, 3 millimetres wide, I made a circular opening into the cochlea and enlarged this opening with a curette. The granulations which were found in the cochlea and vestibule were cleared out with small curettes bent to adapt the spoon to the different parts of the vestibule. (Histological examination of the curettings of the cochlea and vestibule showed masses of granulation tissue and inflamed bone; complete disappearance of the normal structures). With a seeker, bony resistance was found in the labyrinthine cavity above, below, anteriorly, posteriorly, and on the inner wall. The whole of the cochlea was found to be destroyed. All the débris was cleared away and the labyrinthine cavity was swabbed with 1 in 500 biniodide lotion and packed with cyanide gauze saturated with 1 in 4000 lotion. The Eustachian orifice was touched with pure carbolic acid. The whole cavity was then filled with gauze through the post-aural wound. The meatal orifice was enlarged by removal of part of the conchæ; the meatal opening was maintained with a short (one third of an inch) large rubber tube, three-quarters of an inch in diameter, to serve as a ring through which the gauze was passed. The face twitched several times during the exploration with the probe. The chloroform administration was difficult owing to laryngeal spasms. Bleeding from general oozing was troublesome throughout the entire operation. Adrenalin 1 in 5000 was applied. Oxygen was inhaled and was played in a jet upon the wound. During only one stage, when the inner tympanic wall was examined, was hæmostasis at all satisfactory. After the labyrinthine cavity was packed the blood was noticed to be "watery" and brighter than previously, suggesting cerebro-spinal fluid. Wet dressings (1 in 4000) were applied. The duration of the operation was 1 hour 35 minutes.

Subsequent progress.—On August 16th the nurses stated that the patient "had a bad night"; "only half an hour's sleep"; "a little vomiting." The pulse-rate rose from 80 to 120. The respiration-rate varied from 28 to 44 (as previously to operation). The variations were so frequent, apart from posture, that the cause was considered to be purely psychical. The axillary temperature fell to 97·2°. The patient was better and could close both eyes and move the muscles of the face and mouth, but the right side of the face was slightly weakened temporarily. On the 10th the dressings were saturated with watery fluid which had soaked the pillow. On the 11th no more cerebro-spinal fluid had escaped. All the gauze was removed from the post-aural wound except that in the labyrinth. Fresh gauze moistened with biniodide of mercury lotion was packed in. The temperature ranged from 99° to 100°, the pulse was 96, and the respirations were 28. The patient slept from 11 P.M. to 6 A.M. with several wakeful intervals of a few (ten) minutes' duration. Her condition was satisfactory. Her face was as on the previous day—paresis only. On the 12th the wound was dressed; all gauze was removed. The cavity in the petrous was

2½ inches from the tragus and was visible. The patient felt "much better." The wound was repacked with wet gauze. A good view of the aqueduct and labyrinthine cavity was obtained through the meatal tube. On the 13th the patient had slept well from 9 P.M. to 2 A.M. She had been restless since and had pain on the top of the head, which was worse during the day, especially if excited or moved in bed. There was no vomiting; the bowels were opened. She felt better when quiet. The temperature at 7 A.M. was 101° (it has risen 2°); in the afternoon it was 100°. The pulse was 88 and the respirations were 28. The wound was dressed at 5 P.M.; all gauze was removed. The cavity was irrigated with peroxide of hydrogen lotion, dried, and inspected. The aqueduct and vestibular cavity were in view. The cavity was packed with cyanide gauze soaked in binodide lotion. The rubber ring tube was removed. The packing in the post-aural wound was discontinued to-day. On the 14th the wound was dressed as before. The post-aural wound was closed with plastic exudate. The patient still complained of pain on the top of the head. The temperature was 101·6° and the pulse was 88. She had slept from 9 P.M. to 5 A.M. On the 15th the wound was dressed. The patient was interrogated and she stated that the pain on the vertex greatly increased when the gauze was withdrawn (from cochlea cavity) and when repacked into that cavity. From this it was thought that the vertical pain was referred pain and not due to any intracranial lesion. She slept well and took food well. She sat up in bed cheerfully when dressed but preferred to be kept quiet and held her head in her hands afterwards. There had been no vomiting. No gauze was inserted into the cochlea cavity to-day. On the 17th a leucocyte count gave 11,000. A complete survey was made. Nothing abnormal could be discovered. On the 19th ophthalmoscopic examination was *nil* except for an old patch in the choroid. The temperature was still elevated, though the patient showed no evidence in her general condition of fever. It was difficult to correlate the cephalalgia and raised temperature with the general improvement in the patient. Lumbar puncture was performed and several cubic centimetres of perfectly normal-looking fluid were obtained, which was examined cytologically, bacteriologically, and chemically but no abnormal constituents were discovered. It was eventually discovered that the patient, as she improved, endeavoured to keep herself interesting by warming her thermometers, on some occasions to 104° and 106°. She overstepped the mark by raising the temperature to 110° without evincing any sign of pyrexia. This is the more interesting as showing an abnormal psychosis, which was recognised early in the management of her case, and rendered the diagnosis of labyrinthine disease especially difficult to make, but which disease has proved indisputably to exist by the histological preparations of the cochlea which I made. By September the cavity had healed and the patient had completely recovered.

CASE 5. *Chronic suppurative otitis media; mastoid fistula; labyrinthine fistula; extirpation of the external and superior semicircular canals and vestibule; presentation of facial nerve and cochlea; recovery.*—The patient, a girl, aged five and a half years, was admitted to the Evelina Hospital for Sick Children, under my care, in November, 1904, with a discharge from the right external auditory meatus and a superficial mastoid fistula which, according to her mother's account, had existed since the child was six months old. The child had complained of the room going round and she was very deaf; the usual tests could not be applied. Stacke's operation was performed. The mastoid fistula was found entering the accessory cells through the posterior wall of the osseous meatal canal. The antrum which was large, was full of soft cholesteatomatous material and granulation tissue, from which a variety of organisms was cultivated. The first part of the operation was rendered easy by the softness of the bony walls, so that the curette could be used freely. The dura mater of the middle and posterior cranial fossæ was freely exposed and presented a normal appearance. After freely opening the attic and removing overhanging bone a survey of the inner wall of the antrum and tympanum revealed an erosion of the eminentia arcuata externa. A fine probe was passed into the opening in the outer crus of the external canal forwards and entered the vestibule. The probe was then removed and passed into the fenestra ovalis. No resistance was encountered, no remains of the stapes could be found, and the probe readily entered the vestibule below the Fallopian aqueduct. The outer limb of the superior and external semicircular canal, with the ampullæ and intervening bone were removed with a fine gouge and the fenestra ovalis was enlarged with the curette. In this way free drainage of the vestibule was obtained both above and below the facial nerve. After curetting the mucosa of the tympanum freely and removal of all débris a somewhat large meato-conchal flap was cut and turned upwards. The post-aural wound was closed by suture and the cavity packed with gauze through the new meatus.

The after-history of the healing process of this operation on the right ear was uneventful and by February, 1905, the cavity was completely cicatrised. There was never at any stage the slightest suspicion of facial paralysis or other untoward symptom. In December, 1904, while in hospital and convalescent from the radical operation on the right ear, the child developed an acute staphylococcal mastoiditis on the left side upon which I performed Schwartze's operation. This did not interfere with the result of the previous operation on the right side and the child made a complete recovery.

Queen Anne-street, W.

TWENTY-SIX CASES IN WHICH BOTH EYES WERE OPERATED ON FOR SENILE CATARACT.

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IN recently tabulating the results of 152 cataract extractions I found that I had operated upon the second eye in 26 persons, one-sixth of the total number of operations. I regret that my original tables do not enable me to say whether the eyes were right or left and I have therefore entered them in the following list as first and second, the order in which they were operated upon, at intervals varying from three months to five years.

Case.	Sex.	Age.	Results. First eye.	Remarks.	Second eye.	Remarks.
1	F.	70	6/9	—	6/9	—
2	M.	57	6/9	—	6/24	—
3	M.	43	6/9	—	6/9	—
4	M.	61	6/24	—	6/12	—
5	M.	69	6/12	—	6/12	—
6	M.	76	6/24	—	No record.	Was taken ill in hospital; sent home and died in a few weeks.
7	M.	53	6/9	Mr. J. Bankart's operation.	6/9	—
8	M.	59	6/9	—	6/9	—
9	F.	67	6/12	—	6/12	Diabetic.
10	M.	52	6/9	—	6/12	—
11	F.	38	6/9	—	6/24	Probably an amblyopic eye.
12	F.	64	6/9	—	6/9	—
13	M.	69	6/9	Reduced by illness to 6/36.	6/18	—
14	M.	62	6/9	—	6/9	—
15	M.	53	6/9	—	6/9	—
16	F.	66	6/9	—	6/9	—
17	F.	53	6/9	—	6/9	—
18	F.	46	6/9	—	6/9	—
19	M.	72	6/9	—	6/9	—
20	M.	56	6/9	—	6/9	—
21	M.	—	6/9	Mr. C. Higgens's operation.	6/9	—
22	M.	73	6/24	Opacities.	6/18	Opacities.
23	M.	60	6/12	—	6/18	Choroiditis.
24	F.	67	6/12	At Moorfields.	6/12	—
25	M.	52	6/9	—	6/9	—
26	M.	70	6/12	Mr. L. H. Tosswill's operation.	6/12	—

Certain of these cases are of especial interest inasmuch as I operated on the second eye only. In Cases 7, 21, 24, and 26 the vision of the two eyes after operation is the same and in each case I was the second operator. I remember well approaching Case 7 with considerable trepidation inasmuch as my predecessor, Mr. Bankart, had obtained a 6/9 result without astigmatism by the simple extraction without iridectomy. I had but recently succeeded to the post of full surgeon to the Eye Infirmary and tried to persuade the man that he had better rest content with the perfect result already obtained but he was determined to have the use of both his eyes, and I had to do it. I also did, as I generally do, the simple operation and had the satisfaction—or was it the relief?—of seeing his vision with a simple spherical lens gradually improve to every letter of 6/9. Perhaps the most interesting point in the case is that two operators should have avoided astigmatism in one pair of eyes; or, conversely, that one pair of eyes should have avoided astigmatism at the hands of two operators. Case 21 had been operated on by Mr Higgens with a 6/9 result when he came under me at the eye infirmary, and I got the same. Case 24 was operated on at Moorfields with a 6/12 result. The patient did not know (such is fame!) the name of the operator. My result was 6/12. Case 26 had been operated on by my colleague, Mr. Tosswill and had 6/12. I certainly did hope that I might be able to "go one better," but in the end no blandishments (or lens) would induce the patient to exceed the fourth line on the test card.

Case 13 is interesting from a different point of view. I operated on the first eye in 1902 with a 6/9 result. The sight remained good until the winter of 1905–06, when the patient had a serious illness, broncho-pneumonia with pleurisy, probably influenzal in origin, from which he hardly recovered. Sight began to fail during convalescence, and when it was reduced to 6/36 he came to me about it. I could see nothing whatever amiss with the eye, but did not feel hopeful about it on account of having once or twice seen normal eyes in old people go blind from no discoverable cause. I put him on tonics—arsenic, strychnine, and so forth—but though he

recovered his health and strength he gained no sight. The other eye held a promising-looking cataract and the light projection was good, so I advised its extraction and performed the operation. The course of the case was fairly normal and the result was a good eye with media clear and fundus quite normal, but V. = $\frac{1}{60}$. I frequently see this man. He is able to get about and to do his work as a pianotuner and teacher of music in a small way and he has, so far as I know, no other lesion from his attack of influenza.

Two other cases only are worthy of special notice. No. 9 is a diabetic and there is no discoverable reason in her eyes, which are surgically excellent, for the poor result. In No. 11 there is good reason for thinking that the second eye was always amblyopic from squint, and she is also interesting in that she has borne four children who have been the subjects of lamellar cataract and upon whom I have operated. Her fifth and youngest is up to now free from cataract but has not yet reached the age at which the others developed it.

The general conclusion at which I arrive from this small series of cases is that one may reasonably hope, other things being equal, for at least as good a result from the second operation as from the first, the figures working out as follows:—

Similar result in both eyes	53·84 per cent.
Better result in the second eye	15·38 ,,
Worse result	27·23 ,,
No record of second eye	3·84 ,,

This gives 69 per cent. of results at least as good in the second eye as in the first and if the two doubtful cases, Cases 11 and 13, are eliminated the figures will be better still.

Exeter.

COMPENSATORY COLLATERAL CIRCULATION WITH "CAPUT MEDUSÆ" IN CIRRHOSIS OF THE LIVER WITHOUT ASCITES.

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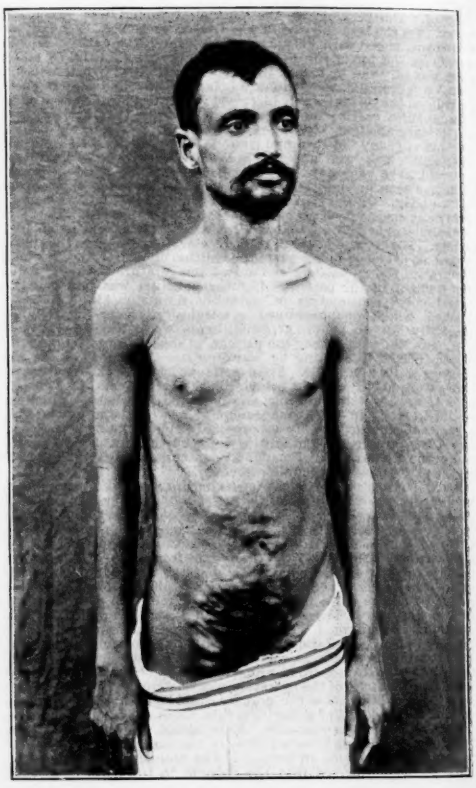
CASES of cirrhosis of the liver without ascites have been occasionally met with. Such cases are of special interest, as their occurrence gave rise to the idea of the Drummond-Talma-Morison operation.[1] Generally speaking, the collateral circulation in cirrhosis of the liver is not capable of carrying off all the surplus of blood and of re-establishing a normal vascularity and in this way removing the ascites.[2] The latter, according to some, occurs in at least 80 per cent. of the cases.[3] The number must be greater still when we consider those cases in which there is complete absence of hæmatemesis and melæna which frequently vary inversely with the amount of ascites present. The following case is therefore of considerable interest, showing a perfect collateral circulation without the least ascites and without any hæmatemesis and melæna.

The patient, a Bengalee, aged 35 years, was first examined by me about four years ago for the treatment of enlarged spleen. He gave a history of attacks of fever resembling malaria. There was no history of hæmatemesis, melæna, or jaundice. On examination the superficial veins of the abdomen were found enormously enlarged, especially the right epigastrics, which were tortuous and very prominent (Fig. 1). The veins round the umbilicus were somewhat dilated. There was a mark of a scar in the right hypochondrial region—the result of an operation in the Medical College Hospital, Calcutta, for an inflamed thrombus in the dilated veins situated here. The spleen was enlarged, extending about two inches below the costal arch. The liver dulness extended from the seventh intercostal space to one inch below the costal arch. The left lobe of the liver felt hard and rough. There was no ascites. A loud systolic bruit was audible over the right superficial and superior epigastric veins. A systolic bruit was also audible at the pulmonary area of the heart. The patient was somewhat anæmic and had some evening pyrexia. Digestion was good. The urine was scanty and high-coloured. The patient was under my observation for some months. The fever gradually disappeared, the appetite increased, and the only symptom which afterwards he complained of was the presence of the enormously dilated veins. Since then I have seen the patient from time to time improved in general health and without any ascites.

FIG. 1.



Cirrhosis of the liver without ascites. 1903.

The patient came to me the last time in March, 1907, complaining of the enlargement of the veins in the abdominal wall, which were a source of inconvenience to him and which were getting so progressively enlarged that he feared they might rupture. He asked for their complete removal by surgical interference. He looked better in health than when I saw him, about four years previously. He was only slightly anæmic, the systolic bruit at the pulmonary region of the heart having completely disappeared. The spleen extended two inches below the costal arch. The liver dulness was smaller than before and the edge of the liver was not felt below the costal arch. The dulness could just be made out in the seventh intercostal space in the right mammary line. There was no ascites. The patient had no fever and his appetite was good. The following was the condition of the venous anastomosis in the abdominal wall (Fig. 2). 1. The right superficial epigastric was enormously dilated, looking almost like coils of intestines and anastomosing with the superficial branches of the superior epigastric which were also very much enlarged. 2. The right superficial epigastric anastomosed directly with the branches of the long thoracic which was also very prominent and enlarged. 3. The left superficial epigastric was more dilated and the anastomosis between it and the left superior epigastric more prominent than when observed about four years previously. 4. The presence of dilated veins round the umbilicus gave rise to a well-marked "caput Medusæ."

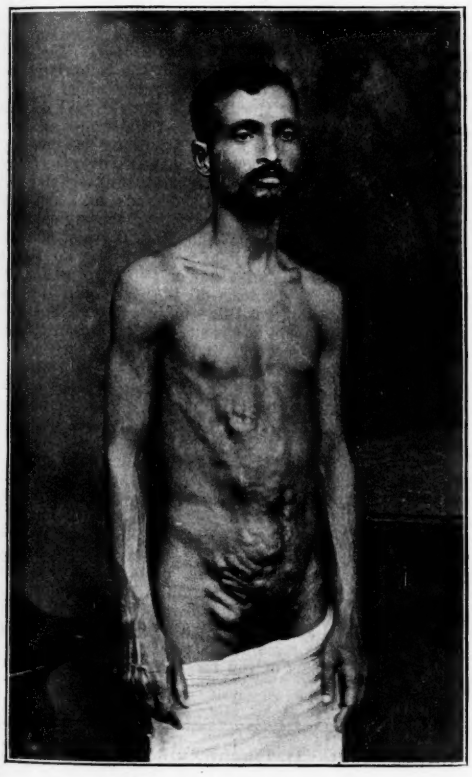
One point that struck me was the fairly good health which the patient was enjoying during all these years. Could the

[1] Brit. Med. Jour., September, 1896.
[2] Nothnagel's Encyclopædia of Practical Medicine (Diseases of the Liver, &c.).
[3] Allbutt's System of Medicine, vol. iv.

complete absence of ascites account for this fact? Ascites may do harm in more ways than one. 1. By pressing upon the vena cava it may interfere with the venous circulation of the lower extremities, giving rise to œdema in these parts. 2. By pressing upon the renal vessels and kidneys. 3. By setting up a vicious circle by pressing upon the branches of the portal vein and thus interfering with the functions of the stomach and the intestines and also offering more obstruction to the portal system. 4. By pressing upon the diaphragm and interfering with respiration and cardiac action. 5. By abstracting from the blood a large quantity of albuminous fluid.

It remains for me to give a brief account of the collateral circulation which may be developed in cirrhosis so as to enable the blood of the portal system to reach the systemic veins. 1. Hæmorrhoidal branches of the inferior mesenteric anastomosing with those of the internal iliac. 2. Mesenteric veins anastomosing with those of the abdominal wall. 3. Coronary veins anastomosing with the œsophageal veins and thus communicating with the azygos veins. 4. Coronary veins and veins of Glisson's capsule on the one hand and the phrenic veins on the other. 5. One or more veins in the round ligament (the accessory portal vein or parumbilical vein or rudimentary umbilical vein of different authors) connecting the portal with the epigastric and other veins of the abdominal wall. 6. Veins of the pancreas, the duodenum, the colon, and the rectum communicating with the retroperitoneal branches. 7. Veins lying in the subperitoneal tissue, between the folds of the hepatic ligaments and the peritoneal folds round the liver communicating with the portal system on the one hand and the phrenic veins and azygos major on the other (the minor accessory portal veins

FIG. 2.



Cirrhosis of the liver without ascites. March, 1907.

of Sappey[4]). Many of these penetrate the capsule of the liver. 8. Left renal veins and the veins of the intestines, especially those of the colon and the duodenum. 9. Superficial branches of the portal veins of the liver and the phrenic veins. 10. Very rarely communication between the parumbilical vein through an abdominal vein with the right iliac vein.[5] Besides the foregoing there may be innumerable new vessels that may develop from adhesions.

I shall mention here another cause besides the collateral circulation mentioned above which may prevent the occurrence of ascites, namely, the increased exudation of fluid into the peritoneal cavity may be reabsorbed by the lymphatics of the diaphragm and the parietal peritoneum, which are independent of the portal system.[6]

Calcutta.

[4] Sappey: Centralblatt für Chirurgie, 1901.

[5] Drummond: Brit. Med. Jour., February, 1888.

[6] Quincke: Ascites, Deutsches Archiv für Klinische Medicin, 1882.

THE SYNCHRONOUS MOVEMENTS OF THE LOWER EYELIDS WITH THE TONGUE AND LOWER JAW OBSERVED IN CERTAIN DISEASES:

A SIGN OF DISEASE IN CONNEXION WITH THE LOWER EYELIDS.

BY HERBERT J. ROBSON, M.R.C.S. ENG., L.R.C.P. LOND.

ON Oct. 28th, 1905, at the Leeds and West Riding Medico-Chirurgical Society I reported eight cases in which a phenomenon connected with the lower eyelids had been observed; and since then it has been seen in several other cases, not only by myself, but by several other medical men. The phenomenon referred to is a slight eversion of the lower eyelids made evident upon protrusion of the tongue or depression of the lower jaw, the lids resuming their normal state when the tongue is retracted or the mouth shut—in other words, the lower eyelids become displaced from the eyeballs or are protruded from the eyeballs to the extent of one or two millimetres upon protrusion of the tongue or depression of the lower jaw. This phenomenon is apparently never present in health; furthermore, it apparently comes and goes with the onset and cure of disease, and therefore I think that it must be a sign of disease; and, since I can find no record of it in any published work or writing, I regard it as a new sign of disease with some distinct significance, and one worthy of further consideration. I do not think that it is a reflex act of disease. It is evidently produced by the contraction of the malaris fibres of the orbicularis palpebrarum muscle—the malaris muscle as described by Henle. From the fact that the facial nerve supplies the malaris muscle and the digastric and mylo-hyoid muscles, and the hypoglossal nerve supplies the genio-hyoid and the genio-hyoglossus muscles, and that the facial nerve communicates in the latter muscle with the hypoglossal nerve; and furthermore, from the fact that the nuclei of origin of the hypoglossal nerve and of the facial nerve are in close proximity in the medulla and the pons Varolii respectively, it is easy to see how the coördinate muscular acts of the simultaneous protrusion of the tongue and depression of the lower jaw with the eversion of the lower eyelids are produced.

In acute cases I am inclined to think that the presence of the sign may be caused by the circulation in the blood of some toxin, or that at other times it may be some nervous impulse acting directly upon the common nuclei of origin of the hypoglossal nerve and of those fibres of the facial nerve supplying the orbicularis palpebrarum and its offshoot the malaris muscle. In chronic cases it is obviously caused by some change in the deeper structures of the skin.

Probably if the phenomenon or sign is regularly looked out for it will be often found present in acute cases as quite a transitory sign and as indicating a severely ill condition; for instance, in a case of influenza complicated with acute laryngitis, in which the patient was extremely ill, the lower eyelid sign was present one night, but it had disappeared the next day when the urgent symptoms had been relieved, and it was not afterwards observed in that case. Of course, a healthy eyelid is referred to, and not the condition of eversion of the lower eyelid sometimes seen in old people with or without granular lids and with marked epiphora, and who, like their lower lids, their figure, and their faculties generally are gradually dropping down in response to gravity and other laws of nature.

Some general conclusions.—1. The phenomenon cannot be detected unless it is specially looked out for, because the

tongue and eyes are not inspected at one and the same time unless the observer is on the *qui vive* for this movement of the eyelids; and this, I think, is one of the main reasons why it has hitherto not received any notice. 2. I think that it should always put the medical man on his guard, whether, for instance, he is treating an acute case for some urgent symptoms, or, on the other hand, examining a case for life insurance; as whenever the phenomenon is present in chronic cases—judging from my own experience—some severe asthenic condition will be always found to exist, or it will be found that the patient has been a martyr to pain for many years. 3. From observations made on a few of the cases I have noticed that the phenomenon for a time almost disappears after the tongue has been protruded several times and also after stroking the forehead or touching the lower eyelid. 4. In all the cases observed except one it was present in both eyes. 5. In three of the cases the phenomenon disappeared as the patients convalesced from their various maladies. 6. In two of the cases, though formerly the phenomenon was present in a very marked degree, it is now nearly absent and the patients are both much better in health than when I at first saw them. 7. In two acute cases in which the phenomenon was observed it disappeared when the urgent symptoms had passed off. 8. As regards chronic cases, the patients who have presented this phenomenon in my own practice have been affected with various cardiac and abdominal diseases, and two of them had suffered from very severe headaches for many years in consequence of uncorrected astigmatism. 9. The phenomenon is never present in health. It comes and goes with the onset and cure of disease, as proved in five of my cases, and therefore I think that it is a clear index or sign of disease.

Leeds.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF DISLOCATION OF THE OUTER END OF THE CLAVICLE.

BY H. M. JOSEPH, M.B., B.C. CANTAB.

DISLOCATION of the outer end of the clavicle is not common, probably less than 3 per cent. of all cases of dislocation. Owing to the difficulty in keeping the bones in position this accident having once occurred is always liable to recur, and hence the prognosis is in every case doubtful. Bergmann says that the prognosis is unfavourable as regards complete restoration of form, but functional impairment is slight although the carrying of heavy burdens is difficult. Free abduction is considered the only movement endangered. It is in athletes that one usually meets with this dislocation, and to them it gives a serious handicap in their sport; football, whether Rugby or Association, has to be given up, and often tennis. One player I know of was able to continue football after having the bones wired, but the limitation of movement caused by the wiring of the acromio-clavicular joint prevented his playing tennis. Two others, although unable to play football again, or tennis with the right arm, took up left-handed tennis. Others have never taken the field again in either sport. One of the first questions therefore that arises in these cases is, "Will it be necessary to give up games?" and it is in this connexion that the following case may be of interest.

The patient, aged 26 years, received his injury while playing Association football, and he presented the usual signs of dislocation of the outer end of the right clavicle above the acromion. He complained of pain and "a feeling as if something were loose in the shoulder," and he could not raise the arm. Examination revealed the outer end of the clavicle lying just above the acromion process and causing an elevation of the outer extremity of the trapezius muscle. By pressing on this swelling and at the same time supporting the arm the dislocation was easily reduced, but it recurred at once on releasing the support of the arm. The shoulder was attended to immediately after the injury. The clavicle was kept in place by means of stout strapping tightly bound and running over the acromio-clavicular joint and under the elbow; a pad of cotton-wool was placed in the axilla while the elbow was fixed well forward and close to the side by a broad calico bandage. The patient was told that he would probably be unable to play football again. The clavicle and acromion were kept in place in this way for six weeks, after which time gradually increasing movements were allowed—first passive and then active. The treatment thus presented no new features. The result, however, was extremely satisfactory. The patient was able to play football again four months after the injury and he has since played in county matches. He has also been able to take part in first-class tennis tournaments. There is now no deformity and all the movements of the arm are perfectly free. The only inconvenience the patient now suffers is an occasional pain felt when pressure is applied over the acromio-clavicular joint.

Oxford-gardens, W.

NOTE ON A CASE OF EXTENSIVE SURGICAL EMPHYSEMA.

BY G. BURNSIDE BUCHANAN, B.A. CANTAB., M.B., C M. GLASG., F F.P.S. GLASG.,

ASSISTANT SURGEON TO THE WESTERN INFIRMARY AND TO THE CANCER HOSPITAL, GLASGOW.

THE following is a case of very extensive surgical emphysema which came under my care some time ago. A man, aged 66 years, fell, striking his chest against the corner of a table and fracturing his seventh and eighth ribs on the left side rather towards the back. About three hours afterwards he noticed that his scrotum was becoming swollen and uncomfortable and this swelling advanced rapidly over the whole body. 24 hours after the injury the body was found to be swollen and puffy all over and the air could be felt crackling under the fingers; it was evidently immediately beneath the skin, which was lifted up in a large soft mass producing the appearance of general dropsy. The entire surface of the body was affected with the following exceptions: the scalp, defined by a line running round the head more or less coronally at the level of the external occipital protuberance, the temporal ridge, and the upper and outer angle of the orbit, and this area of immunity was continued downwards to the malar bones, and thence over the nose as far down as the tip, the eyes and eyelids thus escaping; the point of the chin; the auricles; the hands, back and front, from a line just above the wrist-joint; the region immediately over the patella; and the feet, dorsum, and sole from a line at the ankle-joint. There was no sign of pneumothorax. For the first day or two there was a little dyspnœa, with slight cyanosis of the face and lips, and rather rapid respiration, but this soon passed off. There was no pain anywhere except at the site of the fracture, though the swelling of the scrotum and penis gave rise to considerable discomfort. Treatment consisted in restricting the movements of the chest by strapping and the administration of sedatives for the cough. The emphysema gradually subsided and in a fortnight it had quite disappeared.

The chief interest in this case is the widespread extension of the emphysema and though such cases no doubt often occur I have not been able to find any record in recent writings of a similar one to this. The area of immunity over the nose and eyelids also is notable, since it is recognised that there is a fairly free communication between the subcutaneous tissue of these parts; this has been noticed during the injection of paraffin for nasal deformities, where some of the material has overflowed if not checked by pressure at the sides of the nose. The definite limiting line at the wrists is remarkable, seeing how easily œdema continues up the back of the forearm from inflammation of the hand.

Glasgow.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—The erection of the new building in Great Portland-street for the combined three London orthopædic hospitals is proceeding rapidly. It will accommodate over 200 beds and in addition it will have a detached out-patients' department and nurses' home in Bolsover-street connected to the hospital by means of a subway. Mr. Rowland Plumbe, F R.I B.A., is the architect and Messrs. Holloway Brothers are the builders.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY.

Complete Gastrectomy.—Cholecystectomy.

A MEETING of this section was held on Dec. 10th, Mr. J. WARRINGTON HAWARD being in the chair.

Mr. B. G. A. MOYNIHAN read a paper on a case of Complete Gastrectomy, which will be published in a future issue of THE LANCET, together with the discussion thereon.

Mr. J. D. MALCOLM read a paper on cases of Cholecystectomy. He said that all the cases of cholecystectomy performed by him were recorded in his paper. The method had only been adopted when it seemed that less extensive measures were useless and the cases were only seven in number, but the patients were all so well that it was suggested that the operation should be done more often. The infrequency of recurrence of gall-stones after their removal was held to be a point in favour of leaving the gall-bladder, but histories were referred to and one was related in full in which a better result would probably have been obtained by excision than by drainage of the gall-bladder. The advice to remove it in every case of gall-stones was discussed, and the greater danger of the operation was not considered a good reason for not performing it, because it was only when the gall-bladder was thoroughly disorganised by inflammatory mischief that the danger was great, and those were the cases in which its excision was most urgently required. When the gall-bladder was healthy there was little difficulty or danger in its removal, but in such cases it did not seem necessary to do so simply because it contained stones. The most important objection to its removal was that trouble from obstruction might arise afterwards in the common duct, and then the absence of the gall-bladder might be a very serious consideration and render drainage much more difficult. It was noted that in one of the cases of cholecystectomy recorded the patient had suffered from a sharp attack—the first since his operation—of biliary colic since the paper was written but the patient was again quite well. In several of the cases the gall-bladder was drained for a time and removed later, a plan to be restricted as much as possible but which sometimes seemed safer than to do the larger operation when the parts were inflamed. A case that occurred 12 years ago was related. Mr. Malcolm was asked to operate on an elderly lady who had been ill 16 days and had suffered from rigors with a temperature of 106° F. in the evening and normal in the mornings for four days. The gall-bladder when exposed had the appearance of a slough and the patient died from uncontrollable hæmorrhage. The bleeding was from a laceration caused by pressure over a stone which was in the common duct and which was also blocking the cystic duct. The hæmorrhage was attributed to the state of the tissues rather than to that of the blood. The danger of operating on acutely inflamed highly vascular parts was urged and a simple drainage was recommended in selected cases. When inflammation had subsided the stones or the gall-bladder might be removed with very little danger. The facility and safety of removing a fairly healthy gall-bladder and the greater comfort and rapidity of convalescence tempted the surgeon to excise it in all cases. This indisputably would be correct treatment if there were no possibility of obstruction in the common duct afterwards. The ultimate decision must depend upon the amount of danger incurred by the want of the bladder as a means of draining the common duct, as compared with the danger of fresh mischief arising from its presence and from a second development of stones in it. Mr. Malcolm favoured the view that damaged gall-bladders should, as a rule, be removed, but that a healthy gall-bladder should not be sacrificed simply because it had contained stones.—Mr. MOYNIHAN said that the more of these gall-bladder cases he saw the more conservative he became. He advocated removal of the gall-bladder in cases of malignant disease. It was necessary when considering the operation to remember also the patient, such, for instance, as an obese woman with fatty heart and chronic bronchitis. In regard to recurrence of gall-stones he doubted whether there were six genuine cases.—Mr. MALCOLM replied.

DERMATOLOGICAL SECTION.

Exhibition of Cases.

A MEETING of this section was held on Nov. 28th, Dr. T. COLCOTT FOX, Vice-President, being in the chair.

Dr. H. G. ADAMSON showed for Dr. J. A. ORMEROD a case of Congenital Pigmentation with numerous other congenital defects in a girl aged 19 years.

Dr. J. L. BUNCH showed a case of Lichen Spinulosus in a boy aged six years, with very numerous and marked lesions of the disease.

Mr. G. W. DAWSON showed: 1. A case of Pityriasis Rubra Pilaris with extensive distribution on the arms and legs. (Some members dissented from this diagnosis, regarding the case as one of anomalous psoriasis.) 2. A case of Lichen Planus of unusual type, in which an alternative diagnosis of parakeratosis variegata was made by several members.

Dr. WILFRID S FOX showed a case of very extensive Verrucose Nævus with bilateral distribution.

Dr. COLCOTT FOX showed a case of Sycosis which had been very successfully treated with injections of vaccine derived from cultures made from the patient.

Dr. W T. FREEMAN showed a case of Leucoplakia of the Buccal Mucosa without any skin affection. He offered a provisional diagnosis of lichen planus.

Dr. J. GALLOWAY brought forward records of a case of Psoriasis Treated with Staphylococcic Injections without improvement of the psoriasis.

Mr. T. J. P. HARTIGAN showed a case of Persistent Erythema of the Feet with no symptoms of pain in the joints.

Dr. E. G. GRAHAM LITTLE showed a case of Lichen Planus of unusual type with hypertrophic lesions of one leg and no other symptoms of the disease.

Dr. J. M. H. MACLEOD showed for a second time his case of Multiple Lupus developing after measles, which had been brought forward at the last meeting.

Mr. MALCOLM MORRIS showed a case for diagnosis—a man, aged 63 years, with Atrophy of the Skin following the development of bullæ.

Mr. G. PERNET showed a case of Unilateral Freckling of the Cheek.

Dr. J. J. PRINGLE showed a case for diagnosis—a young woman who had been under the care of Mr. Jonathan Hutchinson many years ago who made a water colour drawing, shown at the meeting, of the condition at that time. The patient had a warty growth on the scalp and persistent suppurative disease of the skin which some members regarded as chronic eczema with peculiar incrustations.

Dr. J. H. SEQUEIRA showed a case of Lupus Erythematosus of the Face with Raynaud-like phenomena and a condition of early sclerodactyly.

Mr. ARTHUR SHILLITOE showed an Annular Syphilide in Acquired Syphilis in an adult who gave a history of primary sore six months previously.

Dr. A. WINKELRIED WILLIAMS exhibited a microscopic preparation of a Section of a Tumour caused by a paraffin subcutaneous injection administered by a "quack."

Dr. ARTHUR WHITFIELD showed a case of Rodent Ulcer successfully treated with zinc ions.

MEDICAL SOCIETY OF LONDON.

Pneumococcus Infections.

A MEETING of this society was held on Dec. 9th, Dr. J. KINGSTON FOWLER, the President, being in the chair.

Professor W. OSLER, in opening a discussion on Pneumococcus Infections, said that among the maladies in modern life pneumococcus infections alone had increased in frequency and severity. In Chicago the mortality from pneumonia had reached as high as 20 per 10,000 of inhabitants. They were face to face with a serious situation in preventive medicine, one quite as deserving of organised study as cancer or tuberculosis. There were varieties in the species pneumococcus which differed not only in their morphological characters but in their degree of virulence. Inflammation of the lungs was only one, though the chief, among many serious diseases due to it. Pneumococcic septicæmia was rarely met with as a fatal malady without recognisable local pneumonic disease. The majority of people carried about a potential infection and catarrhal and suppurative affections of the upper air passages were not infrequently caused by pneumococci. The affection

of the accessory sinuses was important and meningitis had arisen in some cases at least from that source. Acute fibrinous pleurisy and empyema were the chief forms of inflammations of the pleura from direct pneumococcic infection from the lung. Of cardiac affections due to the pneumococcus endocarditis was either associated with pneumonia or was met with as an independent disease. Peritonitis was the most fatal of the abdominal pneumococcic infections. Pneumococcic meningitis as a complication of pneumonia was not uncommon, but isolated instances were met with in which no other lesion was found, and it was quite possible that the infection might come through the nose or the accessory sinuses. Pneumococci existed in the mouth and throat of a certain number of healthy people. Wood found that persons suffering from pneumococcic infection in coughing or talking expelled from the mouth particles of saliva containing pneumococci. A complete disinfection of the mouth was impossible but the most effective mouth disinfectants were those that had alcohol as a basis. He discussed the question of having separate wards for cases of pneumonia and described cases of pneumococcic infection without any definite local lesion.

The PRESIDENT detailed the symptoms in a patient of his which he thought were due to pneumococcic infection without any local lesion beyond some slight changes in the lungs.

Dr. F. DE HAVILLAND HALL thought that it was unnecessary to have separate wards for cases of pneumonia.

Dr. C. THEODORE WILLIAMS considered that delirium or pericarditis or albuminuria occurring in pneumonia were of grave and almost fatal significance.

Dr. S. WEST suggested that perhaps the bacteriologists were grouping together more affections than could be proved to be connected clinically.

Dr. H. A. DES VŒUX narrated another instance of pneumococcic infection without any local lesion.

Dr. W. EWART dwelt on the necessity of disinfecting the mouth.

Dr. H. D. ROLLESTON said that pneumococcic peritonitis was well recognised but was rare; Netter only found it twice in 140 cases examined bacteriologically; at the Victoria Hospital for Children Dr. Marshall had only found one case during the last eight years. On the other hand, at the recent discussion at the Royal Society of Medicine Dr. Gossage reported four cases of primary pneumococcic peritonitis without pneumonia, all under three months and all fatal, from the East London Hospital for Children, where Bowen and Annand collected their cases. Though rare, pneumococcic peritonitis had attracted a good deal of interest on account of its incidence and because it was primary in probably half the cases and so accounted for a considerable proportion of the rare cases of primary peritonitis. It was commoner in children than in adults and in Bowen and Annand's 91 cases under 15 years of age it was commoner in girls than in boys in the proportion of 3 to 1; after that age the incidence in the sexes was equal. From its greater frequency in young girls it had been thought that it might gain an entrance through the Fallopian tubes. The disease had an acute onset resembling appendicitis, then a period in which the symptoms subsided but diarrhœa being usually present typhoid fever might be imitated, and a prolonged stage in which residual abscesses might form, the condition resembling tuberculous peritonitis.

Dr. F. J. POYNTON said that such part as he took in the discussion would be restricted to the infection of the pericardium in children under 12 years of age. He had ventured to take up that point because during the last few months he had been engaged in making an analysis of the post-mortem records of the Hospital for Sick Children, Great Ormond-street, upon the condition of pyopericardium and had collected 100 cases. It would not be possible to speak decisively upon the nature of all those cases because it was only in quite recent times that the isolation of the pneumococcus had been undertaken, but from a study of 15 in which that had been done a reasonable idea could be formed of their character. They differed greatly, for example, from eight cases of pyopericardium of pyæmic origin. The condition was of peculiar clinical interest because of its extraordinary difficulty of detection, a peculiarity shared with all forms of suppurative pericarditis and one that had been recognised for many years. In those 100 fatal cases it was only six times diagnosed with absolute confidence, and in two of those only just before death. Suspicion was aroused many more times, but the essential fact remained that only a small percentage of these were predicted with the assurance of a true diagnosis. One difficulty was the absence of pericardial friction. In two only in that series was that sign mentioned and he need hardly add accounted for two of the six diagnoses. Another was the absence of endocarditis. He found only one clear example of endocarditis in 100 cases. It was quite clear that in the diagnosis of pneumococcal pericarditis in childhood they must be almost invariably prepared to discover it among other severe thoracic lesions. That did not, however, exhaust the difficulties, for in 15 cases there occurred suppurative meningitis and in eight peritonitis. He confessed that he was surprised to find how frequently the fatal illness had been subacute and even chronic. It had appeared to him that suppurative pericarditis must in most instances be rapidly fatal, but now he felt no longer at all sure upon that point. It was impossible in fact to date its origin in most cases but his contention was that the condition was repeatedly found post mortem in cases of persistent and prolonged illness, and generally no one could tell when in that illness the pericarditis arose; there need not be in other words any fulminating symptoms which led the observer to say pericarditis had commenced.

Dr. H. TILLEY, in the course of his remarks, quoted from a report from the pathological laboratory of the Ancon Hospital on the Isthmus of Panama, giving the results of an investigation which was being conducted to determine the relation of inflammations of the accessory nasal sinuses to pneumococcus infections; the accessory sinuses had been examined with regard to that point in 52 necropsies, 37 of which were pneumococcus infections, as follows: lobar pneumonia, 22; acute pericarditis, one; acute meningitis, nine; pneumococcus septicæmia, five. The remaining 15 cases were controls. It had been found that 92 per cent. of all pneumococcus infections coming to necropsy showed in a very marked degree more or less typical pneumococcus inflammation of one or more of the accessory nasal sinuses. The inflammation was generally intense. It was fibro-purulent in character, fibrin and mononuclear cells being abundant. Pneumococci were always present and in numbers depending on the duration of the process. 91 per cent. of the lobar pneumonia cases showed a sinusitis. All cases of acute pneumococcus meningitis presented an inflammation of one or more of the sinuses and in every one the middle-ears and mastoid cells were normal. In the pneumococcus septicæmia group 80 per cent. were found to be associated with a sinusitis.

Mr. SYDNEY STEPHENSON said that modern bacteriological researches had taught them that the pneumococcus lanceolatus played no small part in the causation of several diseases of the eye and of its appendages. The pneumococcus had been demonstrated in the normal conjunctival sac, where it appeared to be capable of leading a purely saprophytic existence.

Professor OSLER replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Sterilisation of Milk by Buddeization.—Action of Certain Salts of Formic Acid on the Circulatory and Muscular Systems.—Value of Novocaine as a Local Anæsthetic for Subcutaneous Use.—Tuberculous Anæmia.—Sequela of Herpes Zoster.

A MEETING of this society was held on Dec. 4th, Dr. JAMES RITCHIE, the President, being in the chair.

Dr. W. G. AITCHISON ROBERTSON gave a demonstration of the Sterilisation of Milk by Buddeization. He said that two years ago he had communicated to the society a paper on the Milk-supply of the City of Edinburgh in which he had indicated certain directions in which it might be improved. The communication had evoked much interest amongst the members of the profession, but, unfortunately, the condition of the milk-supply remained unchanged. The insanitary conditions of the cowsheds remained as before. Complaints from consumers as to the dirtiness of the milk were constantly being made. Deposits of hair, mud, excrement, &c., might be found in many samples of milk and much worse had come under his observation, as the clippings of dirty finger-nails, fragments of tobacco, &c. Dr. Robertson was glad to be able to say that tuberculosis was apparently not so common in the cowsheds of Edinburgh as it was elsewhere in the country. The veterinary inspector of dairy cows, Mr. James Riddock, M.R.C.V.S., had stated in his report that during the year 1906 he had ordered out 46 cows; 37 of these were tuberculous and in nine the udder was invaded and tubercle

bacilli were present in the milk. During the current year 41 cows were ordered out; 27 of these were tuberculous and in five the udder was diseased and the milk contained tubercle bacilli. The tuberculin test was not applied to any of the city cows. Sterilisation of milk by boiling had the disadvantage that the constituents of the milk underwent a marked change and though Dr. Robertson did not believe that it produced scurvy-rickets (Barlow's disease) in children by itself, yet partial sterilisation obtained by heating the milk to a temperature not exceeding 140° F. for 20 minutes was to be preferred. Either method was, however, troublesome and did not free the milk from extraneous matters. Infants obtained germ-free milk from the mothers' breast and he showed a Petri dish containing gelatin agar to which human milk had been added and which had remained sterile during ten days. As a contrast another culture containing cow's milk as delivered in Edinburgh three days ago gave a count of 565,000 bacteria per cubic centimetre—a fair average for clear new milk being 30,000. A sample of the same milk pasteurised for 20 minutes furnished no growth within three days, showing that the ordinary dairy organisms had been destroyed. In his former paper Dr. Robertson had suggested that instead of making it a penal offence to add preservatives to milk it would be advisable that the authorities should allow the addition of the minimal amounts of harmless antiseptics to milk, arguing that it would be better to run the slight risks of their injurious action (if, indeed, they had any) rather than the undoubted risks which result from the use of such a putrescent fluid as ordinary dirty milk. He did not share the belief that antiseptics, such as boric acid or formaldehyde, if used in minimal amounts, exerted any deleterious action on the animal economy. Happily, however, another agent had been applied to the purification and preservation of milk. This was nascent oxygen as evolved from peroxide of hydrogen in contact with milk at a suitable and optimum temperature. It would be difficult to raise objections to an agent so easily decomposed into harmless components. The addition of peroxide of hydrogen had been worked out scientifically as well as practically by Dr. Budde of Copenhagen. The milk besides being rendered germ-free was cleaned and freed from blood, mucus, and extraneous matter.

Dr. C. BUDDE said that he would describe briefly the scheme by which he proposed to solve the difficulty of destroying germs in milk. The milk should be brought in from the various cow-sheds to a central place immediately after milking. Cooling was a dangerous thing if it was carried too far, because it destroyed the natural antibacterial qualities of milk. Cooling to ordinary water-temperature was to be recommended if the milk could not be dealt with at once. Immediately after arrival the milk should be passed through a heater, where it was heated to 50° C. (122° F.) and from there through a centrifugal cleaning-machine of the same construction as a separator but with only one outlet so as not to separate the cream from the milk. This machine not only removed all particles of dirt in a far more effective way than a filter but it also removed many bacteria adhering to the particles of dirt and to the minute motes of the tissues of the cow which were always present in milk. The bacilli thus adhering to different particles had been experimentally proved to be the most resistant, which fact seemed to be a mere question of mechanical protection. It was very likely that, for instance, natural tuberculous milk in which disintegrated udder-tissue was abundant was far more difficult to sterilise than milk to which cultures of bacillus tuberculosis had been added. It was a well-known fact that the natural tuberculous milk could not even be satisfactorily sterilised by boiling. Dr. Budde therefore considered the centrifugal machine to be a very important part of any milk treatment. After the milk had passed through the machine the dirt, &c., from the milk might be seen adhering to the inside of the bowl. After this the milk should be passed into a vat provided with a water-jacket, the temperature of which could be raised and maintained by the introduction of steam. As soon as the milk had got into the vat, or immediately before, it should be mixed with a little peroxide of hydrogen. That in small quantities was a perfectly harmless substance. Every living cell contained an enzyme, isolated for the first time by Oscar Loew at Washington (1901) and by him named "catalase." Its characteristic quality was its power to decompose hydrogen peroxide into water and oxygen and its presence everywhere excluded the possibility of hydrogen peroxide ever being found in a living cell.[1] Consequently hydrogen peroxide, in contradistinction to all other antiseptics, could not be absorbed by the organism but was invariably decomposed before it got through the walls of the intestinal canal. The harmlessness of hydrogen peroxide taken by the mouth had also been established by numberless experiments. The milk (often described as a "fluid tissue") also contained a certain amount of catalase. The proportion of this enzyme in milk might be estimated to something like 0·000001 per cent. When hydrogen peroxide was added to milk at about 50° C. (122° F.) it was able to decompose about 0·035 per cent. H_2O_2. The hydrogen peroxide possessed in itself a strong germicidal power, according to Valdemar Bie so strong that 1000 bacteria could be destroyed by 0·0000000084 gramme H_2O_2. But the milk catalase caused a still stronger bactericidal action to take place which arose from the formation of oxygen in statu nascendi (monoatomic oxygen), and which Dr. Budde had named the secondary germicidal action of hydrogen peroxide. He proved the existence of this secondary effect by comparing the action of hydrogen peroxide with that of any other disinfectant and thereby found that all other antiseptics kept the milk fresh for a longer time at ordinary than at a slightly elevated temperature, whereas the reverse was the case with hydrogen peroxide. He proposed to heat the milk to 50° C. (122° F.) because he found that this temperature was the optimum for the secondary effect and it was not high enough to alter the qualities of the milk. Professor E. von Behring, on the speaker's request, kindly investigated this question and established the correctness of Dr. Budde's result. The vat in which the milk was mixed with hydrogen peroxide was preferably made of glazed earthenware or tinned copper, so that its inner surface was perfectly smooth. It was provided with a mechanical stirring arrangement which was worked now and then in order to create and to maintain a homogeneous mixture. The milk was kept in this vat at the same temperature for three hours, after which it was filled through sterilised tubes into sterilised bottles. The milk should, of course, be instantaneously cooled, which might be done either before or after the bottling. Dr. Budde was able to prove that the amount of H_2O_2 which the milk was able to decompose was also sufficient to bring about complete sterilisation. But the presence of catalase was not absolutely uniform. The safest course was, therefore, to add so much peroxide of hydrogen that there was certain to be a trace left at the end of the process. Then immediately before the bottling a few drops of a catalase solution were added. Dr. Budde said that H_2O_2 had the great advantage that (according to Sieber and Loewenstein) it destroyed toxins but left antitoxins quite unaffected. In, for instance, a neutral mixture of diphtheria toxin and antitoxin, the latter might be set free by the addition of hydrogen peroxide. Further, the presence of H_2O_2 in milk was very easily detected by the potassium-iodide-cum-starch test, by which a quantity as low as 0·0002 per cent. H_2O_2 was sure to be found. Milk after having been subjected to the foregoing treatment possessed the following qualities. None of the component parts of raw milk were in any way altered. The milk was practically sterile and most especially so in regard to the specific pathogenic micro-organisms. The milk was able to be kept considerably longer than ordinary milk, but notwithstanding this fact it should, of course, like all milk, be consumed as fresh as possible. The milk was absolutely free from foreign substances. As for the milk enzymes, the tryptic and peptic proteases and the lipases were unimpaired. The oxydases were destroyed, but seeing that these did not occur in human milk this was generally considered of no importance. The catalase was destroyed. On the other hand, oxydases nearly always accompanied catalase, so that by the final addition of a little catalase both these classes of enzymes were restored to the milk. The nutritive qualities were unaltered and numerous cases had been recorded by medical men in which people (both infants and grown-up people) had been doing very badly on raw or cooked (Pasteurised and sterilised) milk whereas milk thus treated had agreed very well with them. The taste and flavour of the milk were practically unaltered. The behaviour of the milk enzymes during the process had been investigated by Dr. Sjöquist (Stockholm), Dr. Th. Madsen (Copenhagen), and Professor Julius Stoklasa (Prague), with the results mentioned. The bactericidal side of the method had been investigated

[1] Loew: U.S.A. Department of Agriculture, Report No. 68, Washington.

by Dr. Levin (Stockholm), Professor Fischer (Berlin) and his two assistants, Dr. Emmerling and Dr. Abderhalden, Professor Tanner Hewlett (King's College, London), Dr. S. Rideal (London), Professor V. Stein (Copenhagen), Dr. Mstislaw Lukin (Moscow) (experiments carried out at the University of Zürich), Professor Winkler (Agricultural College, Vienna), Dr. Ernst Baumann (Magdeburg), Dr. W. Robertson (Leith), and many others. Further special experiments on natural tuberculous milk had been conducted by Professor Joseph Svensson (Royal Veterinary Institute, Stockholm), Dr. P. H. Santesson (Stockholm), Dr. Ernst Petersson (Agricultural Institute, Ultuna, Sweden), and Dr. Begtrup Hansen (Silkeborg, Denmark), the last on request of the Danish National Antituberculosis Society. All of these scientific men declared unanimously that non-sporing organisms and the vegetative forms of sporogene bacilli were killed by the process. Regarding the spores there was some difference of opinion, which could in most, if not in all, cases be traced back to some defect in the method used. He was confident that the method in its present shape killed even spores with certainty. Experiments had been carried out with bacillus coli communis, bacillus typhosus, bacillus diphtheriæ, bacillus tuberculosis, bacillus anthracis, bacillus subtilis, bacillus enteritidis sporogenes, bacillus acidi lactici, bacillus dysenteriæ, bacillus mycoides, aspergillus niger, staphylococcus pyogenes aureus, streptococcus pyogenes, spirillum choleræ Asiaticæ, penicillium glaucum, and several others. Clinical experiments had been conducted by a large number of medical men, mostly Danish and Swedish. Any bad influence of the treated milk had never been observed but it had often been found to be better and more easily absorbed than ordinary milk. The treated milk seemed to be of therapeutic value in the case of certain diseases, as, for instance, typhoid fever, achylia gastrica, &c. Dr. Baumann had proved that pepsin and hydrochloric acid acted considerably more quickly on this milk than on ordinary milk. The superiority of such milk to heated milk as a food for infants had been proved by many Scandinavian medical men and recently by Dr. W. Robertson of Leith. The superiority of milk treated by Dr. Budde's method to pasteurised milk as a food for calves and pigs had been proved by Mr. R. v. Toll, agricultural expert of the Swedish State. The method now described was in use to a large and increasing extent in Denmark and he was glad to say that it had been taken up by a Scottish company which had agreed to bear the considerably enhanced expenses of a really hygienic milk-supply without raising the sale price. It was evident that the problem of supplying large towns with pure milk could only be solved by big companies. The expenses of getting the best local milk, of watching the cow-stocks and the farmers, of keeping people with sufficient knowledge to take care of the milk, of procuring and running the necessary machinery for treating milk, washing and sterilising bottles, &c., could never be defrayed by small dairymen. Experience from other countries, as well as his personal experience from this country, had fully convinced him of this fact.

Dr. A. GOODALL and Miss ISABEL MITCHELL, B Sc., communicated a paper on the action of Certain Salts of Formic Acid on the Circulatory and Muscular Systems. They found that sodium formate had little effect on the blood pressure in rabbits unless it was in fair concentration. Strong solutions were definitely depressor. Potassium formate was depressor in dilute solutions and fatally inhibited the heart in strong solutions. Calcium formate in dilute solutions was slightly depressor and in concentration tended to raise pressure. The general effect of formic acid in two experiments was depressor. The want of similarity in these results was explained by the influence of the metallic ion. The true formate effect was probably depressor, an action which became enormous when added to the potash effect and which tended to be obscured when opposed by the stimulating action of calcium. Observations on the perfused blood-vessels of frogs showed that all three salts in varying dilutions had a transient vaso-dilator action followed in about a minute by a vaso-constrictor action. The sodium salt caused the greatest individual amount of dilatation, the greatest average amount of dilatation, and its constrictor effect was less than that of potassium and calcium formates. The potassium salt caused the greatest amount of constriction and the least amount of dilatation. The calcium salt had effects intermediate between those of sodium and potassium. Varying the strength of solution showed that in the case of the soda and calcium salts the amount of dilatation increased in proportion to increasing concentration and that the amount of constriction diminished. In the case of potassium the amount of dilatation remained constant for all the concentrations used while constriction increased with increasing strength of solution. Observations on the frog's heart showed that all three salts were toxic to the heart. In the case of potassium formate the toxic action was practically exclusive. In the case of sodium formate a certain stimulating effect, probably in virtue of irritation, could also be made out. The effect of calcium formate was mainly that of calcium, the toxic effects being secondary. Experiments on nerve-muscle preparations indicated that the effects on skeletal muscle were similar to those on cardiac muscle. All the salts were toxic in the order—potassium, sodium, calcium, but in the case of the last the toxic effect was secondary to the action of the metallic radicle. Observations were also made on four healthy human subjects. Only sodium formate was used. The dosage employed was one gramme thrice on one day and two grammes thrice on the next two days and on the morning of the fourth day, a total of 17 grammes. No subjective sensations were experienced. Observations on blood pressure were entirely negative, as were dynamometer records. Ergographic records were also negative in two of the individuals who had undergone daily training with the ergograph. Other results in the case of the two untrained individuals were not ascribed to the sodium formate. The general conclusion was that in minimal active doses formic acid and the three salts studied exerted a toxic action on the circulatory and muscular systems. This toxic action was greatly increased by the metallic ion in the case of the potash salt and might be obscured by the metallic ion in the case of the calcium salt. They all accelerated rather than retarded fatigue. In the dosage stated sodium formate had no demonstrable effect on the circulatory or muscular systems in the healthy human subject. It was stated that the therapeutic use of potassium formate was probably unjustifiable; that sodium formate might impair the strength of a debilitated patient, but that calcium formate might be a serviceable form in which to exhibit lime.—Dr. G. A. GIBSON said that he had used formic acid for several years and thought that from the therapeutic point of view it was very beneficial. For chorea he knew of no drug so good, as it steadied the muscular system without weakening it. Pharmacology and therapeutics did not always go hand in hand.—Dr. CLAUDE B. KER said that clinically toxic effects from the use of formic acid did not exist. Certainly if he injected the drug into the pericardial sac of a patient he would expect toxic effect. He was satisfied that it did good and improved muscular tone in diphtheria; it prevented cardiac failure and renewed activity after paralysis.—After the PRESIDENT had spoken Dr. GOODALL replied.

Mr. J. W. STRUTHERS read a paper on the Value of Novocaine as a Local Anæsthetic for Subcutaneous Use based on 85 cases in which he had used the drug, and compared the results with those obtained from the use of cocaine and eucaine in some hundreds of similar cases. The results obtained with novocaine had been uniformly good and as the outcome of his experience Mr. Struthers was inclined to believe that novocaine was at least of equal, and probably of greater, value as a local anæsthetic for subcutaneous use compared with cocaine or eucaine because of its stability, freedom from irritating properties, promptitude of action, and relatively low toxicity. It should always be combined with an adrenal preparation. For infiltration anæsthesia a solution of novocaine in 0·75 per cent. saline solution of 1–400 plus one drop of adrenalin chloride (1–1000) to every three drachms of solution used was most suitable. For regional anæsthesia a 2 per cent. solution plus two drops of adrenalin solution to each drachm was necessary. The operations done with these solutions included the majority of those suitable for local anæsthesia, and novocaine had been found to answer all the requirements of a good local anæsthetic without producing toxic symptoms in any case.

Dr. ALEXANDER JAMES read some notes on cases of Tuberculous Anæmia. He stated that the condition had been described for the first time by Trousseau and detailed its characteristics. Several illustrative cases were given and stress was laid on the view which Trousseau took, that the condition might be so far salutary. The pathology, course, and treatment of the condition were then discussed.

Dr. ALEXANDER BRUCE gave a communication entitled

"An Unusual Sequela of Herpes Zoster (? Posterior Poliomyelitis)." He described a severe attack which had occurred in a woman and was followed after a short interval by numbness passing up one lower extremity and down the other. There were muscular weakness of the right lower limb with exaggerated deep reflexes and extensor plantar reflex, and loss of pain and thermal sense with conservation of tactile and muscular sense below the level of the herpetic zone. Sweating was also absent. There was a subsequent spread of dissociation sensory symptoms and similar motor symptoms to the other side. A provisional diagnosis was made of a lesion at the base of the posterior cornu, first of one side and then of the other, which was probably of vascular origin. Dr. Bruce gave the reasons for this opinion and made reference to recent physiological researches on the termination of the motor tract and to spinal lesions subsequent to herpes.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Exhibition of Specimens.

A MEETING of this section was held on Nov. 22nd, Dr. A. R. PARSONS, the President, being in the chair.

Dr. WILLIAM BOXWELL showed a Villous Tumour of the Bladder removed from a man, aged about 34 years, who had been perfectly healthy until about 12 months previously to his admission to a hospital. The chief symptoms on admission were hæmaturia, with pain on, and increased frequency in, micturition. The urine was alkaline and full of pus. He died a fortnight after admission to the hospital. At the necropsy the base of the bladder was found to be occupied by several large villous masses, the largest being situated at the mouths of the ureters; the bladder wall was thickened and the ureters were greatly dilated. The kidneys showed the ordinary septic changes following cystitis.

Dr. BOXWELL also exhibited specimens of Carcinoma following an Ulcer of the Duodenum, with secondary deposits in the lungs. The organs were obtained from a man aged 60 years. He had been suffering for some years from attacks of jaundice, sometimes with slight vomiting but he never had much pain. At the necropsy it was found that there was something like an ulcer occupying the ampulla of Vater just at the entry of the common duct. Carcinomatous nodules were also scattered through the lungs. The liver was simply jaundiced; there were no secondary deposits in it.

Mr. K. E. L. G. GUNN exhibited a specimen showing extensive Cancer of the Bladder. The tumour was a very cellular carcinoma and was unusual in not being accompanied with any symptoms of hæmorrhage.

Dr. J. F. O'CARROLL described a case of Thrombosis of the Arm with gangrene occurring in a woman, aged 39 years, who entered a hospital in July last complaining of cramps in the fingers of her left hand. On the day after admission a slight bluish tinge was seen, especially about the wrist, and she was unable to lift the forearm. Nothing in her history gave any clue to the cause of the condition. Her heart was found to be rather weak, with some slight softening of the first sound. The only objective defect to be found was a small quantity of albumin in the urine. Her chest was small; she was thin and had a ruddy blue face. On the day after admission pain was complained of in the right hand and arm, and a slightly black ring was found about the right wrist. Within a few days the circle moved up the left arm, while the right hand cleared up. The left hand gradually dried up and became perfectly rigid, and in about three weeks the dryness and mummification had reached the junction of the upper and middle third of the forearm. The arm above this became swollen and tender, and presently a line of demarcation occurred and sank in about a fortnight to a depth of about half an inch. The arm was amputated above the elbow joint. The stump healed perfectly and she left hospital much better in general health.—Dr. H. STOKES referred to a somewhat similar case in which the gangrene was undoubtedly due to the condition of the vessels of the arm, which were rigid and their lumina were almost obliterated.

Dr. W. G. HARVEY showed a specimen of Sarcoma of the Tibia occurring in a married woman, aged 55 years.

Professor ARTHUR H. WHITE showed a few interesting old specimens from the museum of the College of Surgeons. In two specimens of Cases of Hanging obtained about 80 years ago the same lesions were present. In each case the thyroid cartilages and os hyoides were widely separated from each other, the intervening muscles, &c., having been almost completely torn across. The epiglottis was torn away from the rest of the larynx and ascended with the os hyoides and tongue into the floor of the mouth. In Vol. V. of the old Dublin Hospital Reports a short description of these specimens was given. It would appear that the omo-hyoid, sterno-hyoid, and sterno-thyroid muscles were lacerated in such a fashion that only a few shreds held the torn portions together. The right sterno-mastoid was ecchymosed, contused, and broken, while the left sterno-mastoid was but slightly bruised. The knot on the rope was to the left side. The skin alone intervened between the rope and the interior of the pharynx. The cervical vertebræ and spinal cord were uninjured. Another specimen illustrated Ulceration of a Tracheotomy Tube into the Aorta. No history was attached but apparently the condition for which the operation of tracheotomy was performed was an acute one, as no disease of the larynx was recognisable. At a period long after the operation but sometime antecedent to death some unskilful person attempted to replace the tube but thrust it instead between the sternum and the trachea, with the result that ultimately the lower end of the tube ulcerated into the arch of the aorta. Judging from the appearance of the wound in the trachea some time must have elapsed before this occurred. From the time the tube was put in the false position the patient must have breathed in the ordinary way, as the tracheal wound was quite blocked by the tube in front.

SECTION OF SURGERY.

Exhibition of Cases.

A meeting of this section was held on Nov. 29th, Mr. E. H. TAYLOR being in the chair.

Dr. R. ATKINSON STONEY presented a man, aged 44 years, whom he had Trephined for Intrameningeal Hæmorrhage. The patient was admitted to the Royal City of Dublin Hospital on Tuesday, Sept. 3rd, 1907, having fallen on the back of his head in the street on the previous Saturday; he seemed none the worse at the time but on Sunday evening he became drowsy and stupid. On admission he was dazed and stupid; he could not speak properly; after commencing to answer a question he began to talk nonsense. His pupils were equal, contracting to light; his pulse-rate was from 65 to 70, and his temperature was 99° F. He was very restless and complained of pain in the right occipital region; the reflexes were normal. On the 12th Dr. Stoney trephined over the left parietal eminence. The dura mater was bulging, dark blue, and not pulsating; on opening it he found a thin layer of clot and dark fluid blood; he could not feel any laceration or fracture, though he felt both the petrous portion of the temporal bone and the orbital plate of the frontal bone. At the end of the operation the pupils were larger, reacting to light, and the brain pulsating; the pulse, however, was bad, but improved after infusion of three and a half pints of saline solution. The patient was better in the evening and swallowed a few mouthfuls of milk with difficulty. On the 13th the pupils were reacting; complete paralysis of the right arm was found; the knee-jerks were absent; the plantar reflexes were normal; the pulse rate varied from 100 to 120. On the 14th the patient's condition was very bad. The flap was very prominent and not pulsating; on taking down the flap Dr. Stoney found no clot but the brain was prominent and not pulsating; the vessels were congested. He put a needle about two inches into the brain and drew off a test-tube full of clear fluid under considerable tension; the brain receded somewhat and pulsated feebly; the eyes reacted better; the pulse and the colour of the face became better. When dressed on the next day the flap was not so prominent; the patient appeared slightly conscious and recognised his wife and brother. He gradually improved and began to use his right hand on the 17th. At present he appeared to be in perfect health; he had normal movement of the previously paralysed arm but some difficulty in pronouncing some words and complete inability to read, though able to write and to recognise all objects.—Mr. TAYLOR asked whether Dr. Stoney's view of the bulging of the brain was that it was due to distension of the lateral ventricle or whether he considered that there was any œdematous condition of the brain tissue itself.

—Mr. ALEXANDER BLANEY said that the typical history of intrameningeal hæmorrhage was that the patient became unconscious and did not become conscious again, but in the case before them the patient did not lose consciousness when he met with the fall. He thought that the bulging of the brain after the operation was due to some inflammatory phenomenon.—Dr. STONEY, in reply, said that he was doubtful as to whether the hæmorrhage occurred at the time of the injury, the symptoms of increasing compression being due to œdema of the brain, or whether the hæmorrhage had occurred later and was producing the symptoms of pressure by itself. He thought that the protrusion of the brain was mainly due to the collection of fluid in the lateral ventricle.

Mr. W. I. DE C. WHEELER exhibited a case of Ascites from Hepatic Cirrhosis successfully treated by the Talma-Morison operation performed three years ago. The patient had been frequently tapped before the operation and drained through an exploratory laparotomy wound, but without any beneficial result. For about three weeks after the epiplopexy fluid collected and a small amount had persisted, getting neither more nor less for the past three years. The patient, who weighed about seven and a half stones before operation, now averaged 11 stones. The amount of fluid withdrawn by paracentesis before the radical operation was performed approximated two gallons per fortnight for three months. There was an absence of any cardiac or renal complication.

Mr. SETON S. PRINGLE exhibited a case of Mucous Colitis in which he had performed appendicostomy some months ago. The patient, a strong labouring man, with no sign of neurosis about him, sought treatment some two years ago for an uneasy burning sensation in the lower bowel and rectum, some pruritus ani, and the passage of a quantity of mucus in the stools. He was found to have hæmorrhoids and these were removed by operation, but he returned some two months later worse than ever and now the whole motion was often composed of cylinders of mucus. A course of treatment consisting in daily irrigation of the large bowel with astringents and antiseptics was then commenced and persisted in for months, the patient at the same time being dieted and gastric sedatives, &c., being given by the mouth. As the treatment resulted in no improvement Mr. Pringle performed appendicostomy last June in order to enable the whole large intestine to be washed out systematically. After giving a short history of this operation and describing its performance, Mr. Pringle pointed out that many cases of cure of mucous colitis by its aid had been reported and so far no failures. Since last June the patient had washed out his own colon daily with various antiseptics and latterly had been using a solution of argyrol of strength 1 in 1000 in the morning and normal saline solution at night, but Mr. Pringle regretted to have to report that the condition was in no way ameliorated and he regarded the treatment in this case as a complete failure. The bowel had been examined carefully with the electric sigmoidoscope and no gross lesion had been found, so that this was apparently a true case of mucous colitis and not one of those cases of ulceration, kinking, or growth which often so closely simulated that disease.—Mr. R. C. B. MAUNSELL said that he considered the operation a most useful one. He suggested that if the medical treatment did not prove successful an ileo-sigmoidostomy might be successful, in which case the excluded piece of gut could be resected subsequently.

Mr. MAUNSELL showed an elderly man on whom he had operated for a Carcinoma of the Floor of the Mouth. By the time the patient presented himself for treatment the growth had involved the tongue and was extensively adherent to the jaw. The operation consisted of removal of half the tongue and a portion of the jaw extending from the neighbourhood of the middle line to the last molar tooth.

HUNTERIAN SOCIETY.—A meeting of this society was held on Nov. 27th, Mr. F. Rowland Humphreys, the President, being in the chair.—Dr. H. Russell Andrews read a paper on the Treatment of Puerperal Eclampsia. He emphasised the importance of the routine examination of the urine during pregnancy, especially during the first one. Albuminuria of pregnancy, even of high degree, might be so insidious in onset, producing few marked symptoms, that if routine examination was not carried out a convulsion might be the first symptom that there was anything seriously wrong. If much albumin was found the patient should be put to bed, the bowels kept well open, and the diet should consist entirely of milk. If the condition did not improve the question of induction of premature labour must be considered. If threatening symptoms of eclampsia were present when the patient was first seen, a brisk purge and a thorough diaphoresis might avert the attack. It should be impressed upon every patient after recovery from eclampsia that she should put herself under medical observation as soon as she found herself to be pregnant again. Injection of morphine was one of the best methods of stopping the fits but must not be repeated without due caution, as poisoning might occur and prove more difficult to treat than the eclampsia itself. Chloroform was useful but its administration for several hours at a time was to be deprecated on account of increasing the tendency to heart failure and œdema of the lungs. The value of bleeding was discussed and also that of induction of labour. The patient must be given plenty of fluid by the mouth, rectum, or into the cellular tissue while she was being made to sweat in a hot pack, otherwise the concentration of the poison in the blood might induce convulsions. Administration to an unconscious patient of food or drugs, particularly croton oil, by the mouth was deprecated strongly. Subcutaneous injection of saline solution was recommended for the purpose of diluting the poison and re-establishing the function of the kidneys. Methods of treatment by lumbar puncture, by thyroid extract, and by veratrum viride were discussed briefly.—Dr. T. W. Eden said that he agreed almost entirely with the method of treatment advocated by Dr. Andrews. Upon only one point did he differ materially from him and that was that he attached a good deal more importance to the evacuation of the uterus than did Dr. Andrews. He accepted the toxæmic theory of the causation of eclampsia and therefore agreed that elimination of the poison from the blood must form a very important indication for treatment. But there could be no doubt that the ultimate cause of the toxæmia of eclampsia was the pregnant state and the production of the poison would not cease until pregnancy had been terminated. Accordingly no case of eclampsia could be looked upon as definitely cured until the cause of the toxæmia had been attacked by evacuating the uterus. He was in favour of immediate induction of labour in all cases of eclampsia and in all cases of premonitory symptoms of eclampsia in which labour had not begun spontaneously. The most suitable method was generally preliminary dilatation of the cervix sufficient to allow the introduction of the Champetier de Ribes' bag and hastening dilatation by continuous traction upon the bag. When sufficient dilatation had been obtained delivery should be accomplished by version or forceps. This procedure would not interfere with the application of those methods of promoting elimination which Dr. Andrews had described. He attached importance to venesection in cases not characterised by marked anæmia and œdema, subcutaneous saline infusion, and sweating by means of the wet pack. Enemata and irrigation of the colon were also very useful. Cases of continuous coma were practically hopeless and morphine and chloroform were unsuitable remedies in these circumstances, but he thought that such cases should never be allowed to die undelivered, for evacuation of the uterus remained practically their only chance of life.—The President said that with regard to the injection of saline fluid, care should be taken as to the amount of salt in the solution, lest it added to the concentration of the blood with bad results. He alluded to the diminished alkalinity of the blood and its treatment by citrate of potassium, and finally asked whether one of the prodromata of eclampsia was not the diminution of the total amount of urine passed in the 24 hours.—Dr. W. Langdon Brown thought that the effects of injecting hypotonic salt solution would be to cause fluid to pass from the blood stream to the tissues, thus increasing the œdema, and not increasing diuresis. He was much obliged to Dr. Andrews for calling attention to the necessity of free administration of water if the dry pack were used. Physiological rest to the kidneys would not be the result of concentrating the urine and for that reason he was chary of using diaphoretic measures in uræmia. But combined with large quantities of water by the mouth such methods might still have their sphere of usefulness.—Dr. W. A. Milligan remarked on the difficulty of getting patients to send frequent specimens for examination. The interesting fact had been demonstrated that whereas some recommended the induction of labour others preferred to keep their patients under morphine. He allied himself to the latter class unless labour was advanced. The question of salines was an interesting one, especially in view of the fact that

some authors believed that the retention of chlorides in the blood was a cause of eclampsia. The reduction of blood pressure could be effected either by lumbar puncture or by the hypodermic injection of veratrum viride. The latter method appeared to be the more effectual.—Mr. W. Harris Best advocated the use of chloroform and spoke favourably of the administration of chloral and bromides. He considered that diet was a matter of great importance.—Mr. M. C. Corner thought that eclampsia was less frequent now than formerly. He relied upon morphine and chloroform and had never lost a case.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 4th, Mr. E. Powell being in the chair.—Mr. W. Morley Willis showed a man, aged 25 years, in whom he had Excised the Right Patella five months previously for a simple fracture caused by muscular violence while running to catch a cricket-ball. The movements of the joint were now perfect and there had been no sign of stretching in the tendon concerned. Mr. Willis had performed the same operation in two other cases. The first of these was a comminuted fracture and the result there was so good that he was induced to remove the bone in the two latter rather than to wire. In all three he regarded the result as at least equal if not superior to that obtained by wiring the bone.—Mr. A. R. Tweedie gave a demonstration of the Physiology of the Semicircular Canals and a short description of its clinical application to the diagnosis of labyrinthine and cerebellar diseases. For the adaptation of these facts they were chiefly indebted to continental observers and their origination was associated with the name of Dr. Bárány. It had long been known to physiologists that stimulation of the vestibule produced peculiar oscillating movements of the eyes; and elaboration of this knowledge had established certain data as to the nystagmus so produced. This was characterised by a quick movement in one direction alternating with a slower return in the opposite direction. If the eyes were turned in the same direction as the quick movement the involuntary movements were accentuated; but they decreased or disappeared when the eyes were turned to the opposite side. Further, the nystagmus varied according to the particular canals stimulated; thus a horizontal movement occurred in connexion with the external canals, a rotatory with the superior, and a vertical or diagonal one with the posterior. These movements were then demonstrated successively in two boys seated on a rotating stool whilst the heads were held in different positions. Reference was also made to the varying intensity of the effect dependent on the direction of the current of the endolymph through the ampullæ. Similar results might be brought about by syringing the ear, especially where the tympanic membrane was absent, in otitis media, and most of all where a fistula existed; it was noticed, too, that cold water acted as a depressant and hot water as an excitant of a pre-existing or elicited nystagmus. Anodal and kathodal currents from a galvanic battery, direct pressure of a probe on the inner wall of the tympanum, and variations of air-pressure in the meatus also afforded similar diagnostic data. Cerebellar lesions also caused this "vestibular" nystagmus and recourse might therefore be had to these tests to determine and to locate such disease and to differentiate it from pathological processes in the labyrinth. Allusion was made to the important relation of the external semicircular canal to the aditus ad antrum and to the part played by the labyrinth in transmitting infectious processes to the posterior fossa of the skull viâ the aquæductus vestibuli. Mr. Tweedie urged the more general adoption of these methods of diagnosis, since their application was easy and their importance of great value, as evidenced by their routine use in Politzer's and other clinics. —A discussion followed, in which Mr. Powell, Dr. C. H. Cattle, Mr. J. Mackie, Dr. A. G. Reid, and Dr. E. C. Kingdon took part, and Mr. Tweedie replied.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Nov. 27th, Dr. Francis H. Hawkins (Reading), Vice-President, being in the chair. —Dr. Cuthbert Lockyer (London) read a paper on Cancer of the Uterus. He said that 4000 women succumbed annually to this disease. Mention was especially made of the necessity of early diagnosis and also of the need of acquainting women with the early symptoms of the disease, reference being made to the resolution carried at the meeting of the British Medical Association at Exeter in July, 1907. A distinction was made between cancer of the body and cancer of the cervix uteri. Whilst vaginal hysterectomy produced excellent results in the treatment of the former condition, this operation was a complete failure so far as cancer of the cervix was concerned, recurrence being the rule rather than the exception in the latter case. Cancer of the cervix should be treated by a more thorough method of extirpation, such as that advised by Professor Wertheim of Vienna. In this operation the growth was removed within a closed sac formed of the dissected vagina. This minimised the risk of implantation of cancer cells on freshly cut surfaces. Of secondary importance came the free removal of the parametric tissues and of enlarged iliac glands.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Dec. 6th, Dr. W. Langdon Brown, the President, being in the chair.—Mr. W. Campbell M'Donnell showed a girl, aged 12 years, who had a Diffuse Symmetrical Squamous Eruption all over the body; it had existed three weeks and was considered by most of the members to be psoriasis.—The President showed a man, aged 39 years, suffering from a recent Pleural Effusion but with a previous tuberculous history who exhibited Calmette's ophthalmo-reaction. One drop of a fresh solution of dried tuberculin of 0·5 per cent. strength put on the eye caused acute conjunctivitis in three hours. He also showed the ulnar reflex.—Dr. D. Ross showed a man, aged 39 years, who had a very dilated stomach probably due to malignant constriction at the pylorus. He complained of pain in the back, sickness, and wasting, and his stomach appeared markedly distended on the administration of the two halves of a seidlitz powder separately.—Dr. B. G. Morison read a paper on the Treatment of Gastric Ulcer. In order to rest the stomach he insisted that from the outset rectal feeding for a week was essential. He advocated adrenalin for the relief of hæmorrhage, as it reached the bleeding point and caused an intense vaso-constriction. The sucking of bismuth lozenges increased the flow of saliva and so prevented the mouth getting dry; it also prevented septic infection of the parotid and counteracted hyperacidity. At the end of a week he gave small quantities of milk to which sodium citrate had been added in the proportion of two grains to an ounce; three grains of mercury with chalk were also given three times a day and had a marked deobstruent effect.

EDINBURGH ROYAL MEDICAL SOCIETY.—A meeting of this society was held on Dec. 6th, at which Dr. A. H. F. Barbour gave a demonstration on Frozen Sections illustrating Pregnancy and Labour. The slides which he showed were taken from the well-known sections of Braune, Pirogoff, Chiara, and himself. And in addition some photographs of plaster casts of the shape of fœtuses in utero and of the inside of the uterus were also shown. The chief interest of the discussion following rested on a coronal section by Dr. Barbour and Dr. Webster which showed that the peritoneum laterally did not reach into the pelvis at all, explaining partial tears of the lower uterine segment in labour, and putting their cause in a true scientific light.—Dr. N. S. Carmichael showed two cases: (1) A young man suffering from a Swelling on the Inner Side of the Knee-joint, probably angiomatous in nature; and (2) specimens from a case of Recurrent Fracture of the Femur in a boy, aged nine years, due to sarcoma.

A NEW INSTITUTE AT FRANKFORT.—A new institute for the study, human and comparative, of the brain and nervous system has been established at Frankfort where the Zoological Gardens and the various hospitals and infirmaries will supply abundant material for study. The institute will be supplied with apparatus of the newest and best type and there will be a library of the most complete kind for the purposes of research. Dr. Ariens-Kappers of Amsterdam has been offered the post of chief of the comparative anatomy department, and Dr. Heinrich Vogt of Göttingen that of chief of the pathological department. Courses of lectures will be given and yearly reports of the work done will be published. It is proposed to take over Dr. Wallenberg's *Annual* dealing with the central nervous system, he as well as Dr. Kohnstamm and Dr. Quensel continuing to coöperate. There will be accommodation for students as well as for men of science who wish to take up independent researches.

Reviews and Notices of Books.

Lehrbuch der Gynäkologie (*Text-book of Gynæcology*). By Professor MAX RUNGE, Professor of Midwifery and Gynæcology at Göttingen. With numerous illustrations in the text. Third edition. Berlin: Julius Springer. 1907. Pp. 522. Price 10 marks.

THIS work of Professor Runge has met with a considerable amount of appreciation and the third edition has been called for within five years of the appearance of the first. The book is one of marked merit, for not only are the chief facts of gynæcology shortly and clearly placed before the reader but he is enabled by means of the carefully revised references which are given to the recent literature to follow his studies of any particular portion of the subject upon which he may wish to obtain further information. The selection of the most important papers which have appeared in gynæcological literature cannot fail to be of value to the student or practitioner who has usually no time for collecting these references for himself. The book is written, as we pointed out in our notice of the first edition, with a clear conception of the important fact that the best gynæcologist is not the mere specialist but a well-trained physician who is able to take a clear view of the general health of his patient as well as of her special ailment. A woman's whole life is so bound up with her most important duty, the bearing of children, that any disease of the pelvic organs cannot fail to react upon the organism as a whole. We may specially commend the section devoted to the consideration of the best method of bringing up and training young women and girls.

As Professor Runge points out, an immense amount of literature has appeared during the last few years on the subject of the treatment of backward displacements of the uterus by operation. As he truly remarks, many cases of retroflexion cause no symptoms at all and therefore require no treatment, and the practitioner is too often inclined to imagine that because a patient has backache, for example, and a retroversion or retroflexion of the uterus, therefore the one must be dependent on the other, whereas only too often there is no connexion at all between the two. The operations of ventro-suspension and ventro-fixation undoubtedly have been considerably abused of late years in the frequency with which they have been performed, and the author is therefore well advised to utter a note of warning, all the more impressive because of his vast experience, as to the fact that in many of these cases it is not the displacement which requires treatment but the condition of neurasthenia from which the patient is suffering.

In the section dealing with the operative treatment of carcinoma of the uterus great stress is laid on the importance of a more complete education of the laity in the necessity for seeking medical advice early when any symptoms suggestive of the occurrence of this disease appear. Professor Runge holds that cancer is a disease curable by operation in its early stages and therefore he concludes that a diminution of the mortality from this dread disease is to be sought in the better education of the public in seeking medical advice for the very earliest symptoms rather than in any further development of our operative procedures. The extensive abdominal operations for removal of the carcinomatous uterus are described with approval but for early cases of cancer of the cervix vaginal hysterectomy is considered sufficient.

A number of new illustrations have been added in this edition, many of them taken from Professor Howard Kelly's work on "Operative Gynæcology." The book is a good one, clearly and carefully written, and no doubt it meets with favour from German students. It may profitably be consulted by such English students as are conversant with the German language and the practitioner or the specialist will find in it a most readable account of the current German teaching on gynæcology.

The Odes and Epodes of Horace. Translated into English verse corresponding with the original metres. By JOHN MARSHALL, M.A. Oxon., LL.D. Edin., Rector of the Royal High School of Edinburgh. London: J. M. Dent and Co. New York: Putnam's Sons. 1907. Pp. 307. Price 2s. 6d. net.

IF translation, like imitation, is the sincerest form of flattery, then the most flattered man in the whole world of literature is Quintus Horatius Flaccus. Scarcely a year passes on the continent or in the British Isles without adding to the list, already multitudinous, of translators more or less successful. How are we to explain the undoubted fact? Lord Lytton, himself a not unsuccessful translator, finds it in Horace's "charm"—the "fitting of aptest words" to things which touch and move the universal heart. Some such quality, implying perfect sanity, intellectual and moral, inspired by sentiment at once noble and kindly, and expressing itself with a "curiosa felicitas" or "happy finish" compounded of lucidity, brevity, and grace, can alone account for the welcome accorded to the poet down to the modern day by all nationalities—Latin or Teutonic, Celtic or Slav.

Among the professions—theological, legal, or medical—the last-named yields to neither of the other two in appreciation or love of Horace—a fact to which Conington, one of his best translators, bears witness when dedicating his version of the Odes and Epodes to the late Dr. J. A. Symonds "in memorial of common tastes and interests," a fact still further attested by Sir Henry Halford, Sir Thomas Watson, Dr. Andrew Wood, Dr. King Chambers, Sir Henry Acland, and other men of light and leading in medicine, whose writings, in quotation and indirect allusion, are redolent of the

"Romanae fidicen lyrae."

We therefore make no apology for drawing the attention of our readers to the latest—though it will not be the last—of translations of Horace, "the fruit," as its author tells us, "of forty years of study," carried to completion in "the leisure of at least ten recent years." Dr. Marshall, indeed, comes well-equipped to the task which, he truly says, "is notoriously a difficult one." At Balliol, a favourite student of Jowett who refers to him in writing to the late Professor Sellar of Edinburgh as the "strongest man you have sent us for many a day"; as Rector of the High School in the "grey metropolis of the North," a worthy successor of Donaldson and Schmitz, of Carson, Pillans, and Adam, he is known to combine sound scholarship with literary and artistic proficiency, and the present volume will do no discredit to the expectation formed of it after such a record. He has done well in following in the lines of Conington by keeping more or less to the metres of the original—deviation from which has marred such otherwise admirable work as Sir Theodore Martin's or Sir Aubrey De Vere's—and he has done equally well in gratifying the English ear with rhyme, a condition of success ignored by the late Professor Newman and Lord Lytton to the detriment of their often excellent translation. He has imposed another law upon himself—that of expressing Horace's meaning line by line in his rendering, while rigidly avoiding interpolation of even congruent thought, and using the language of poetry while keeping clear of paraphrase to which the exigencies of rhyme might tempt him. Pretty severe conditions these, and not easy to observe in reproducing the lucidity, the ease, the "liquid curves" of the original. How he has acquitted himself of the task may best be seen by comparing him with the most formidable of his predecessors, Conington. Take, for instances, the last two quatrains of that ode (IV., 3) which Julius Cæsar

Scaliger says he "would rather have written than be king of Arragon":—

O testudinis aureae
Dulcem quae strepitum, Pieri, temperas,
O mutis quoque piscibus
Donatura cycni, si libnat, sonum,

Totum muneris hoc tui est
Quod monstror digito praetereuntium
Romanae fidicen lyrae:
Quod spiro et placeo, si placeo, tuum est.

According to Conington:—

Goddess, whose Pierian art
The lyre's sweet sounds can modulate and measure,
Who to dumb fish can'st impart
The music of the swan, if such thy pleasure,

O, 'tis all of thy dear grace
That every finger points me out in going
Lyrist of the Roman race:
Breath, power to charm, if mine, are thy bestowing.

According to Marshall:—

Pierian Muse, whose fingers rule
The dulcet chime of music's golden shell,—
Thou who could'st ev'n dumb fishes school,
To sing like swans, if thou didst think it well,—

'Tis by thy gift that passers wait,
For my appearing and a finger raise
"Rome's Bard" to point at. Whether great
Or small my power to please, thine, thine the praise.

We leave it to the reader to decide which of the two versions is more faithful as a rendering—both complying with the same severe conditions and both appealing to the appreciation not only of the classical but of the purely English scholar. On the whole, we incline to give the palm to the younger Oxonian.

Dr. Marshall's superiority to other predecessors is even more marked by comparing his rendering of the "Caelo tonantem" (III., 5) with that of Gladstone who took special pains to do justice to what he held to be the finest ode in Horace, or his translation of the "Pastor cum traheret" (I., 15) with that of Sir Theodore Martin who unfortunately has chosen the favourite metre of Moore's Irish melodies for a dirge rehearsing the Burden of Troy. Comparison with other translators apart, Dr. Marshall may fairly be said to hold the field for fidelity and grace, possessing as he does not only adequate critical knowledge but, as his "Dedicatory" quatrains reveal, the "vision and the faculty" of a true poet. The volume is one of a series in which Virgil's Æneid has already been admirably rendered with the Latin text on one page and the English on the other; an arrangement which the scholar will find convenient, and, still more, the reader who has allowed his "classics" to get "rusty." It may thus induce many a professional man on his holiday to renew familiarity with a poet whom Anthony Trollope found the "most modern" of writers; whom Thackeray cherished as that "delightful master"; and from whom the "world's tired denizen" continues to draw refreshment as grateful as Horace himself drew from his own Bandusian well.

School Hygiene. A Handbook for Teachers and School Managers. By HERBERT JONES, D.P.H. Cantab., Fellow and Honorary Secretary of the Incorporated Society of Medical Officers of Health, &c. Dent's "Mathematical and Scientific Text-books for Schools." Edited by W. J. GREENSTREET, M.A., F.R.A.S. London: J. M. Dent and Co. 1907. Pp. 148. Price 2*s.* net.

WE can confidently recommend this little manual for the use for which it is intended. It is a model of lucid and precise writing, such as can readily be grasped by any school teacher, even though he has had no scientific training. We take it that there are few conscientious members of this class who are not now fully alive to the supreme importance of tending their charges' bodies no less than their minds, and if all the facts set down in this handbook be assimilated by its readers they will have considerably improved their qualifications for the primary education of children; it may be added that school managers and, indeed, parents of school children will also profit by its instruction. The book deals with the surroundings of the child and the personal hygiene of the child himself and we should not wish to subtract anything from what it teaches. No contentious matter is introduced but there is a large amount of sound doctrine in this small and convenient manual. The author would probably not wish it to replace the larger works on the subject but it forms an admirable introduction to a study which must increasingly appeal to the administrators of our elementary schools.

A System of Radiography, with an Atlas of the Normal. By W. IRONSIDE BRUCE, M.D. Aberd., Physician to the X Ray and Electrical Departments, Charing Cross Hospital, &c. London: H. K. Lewis. 1907. Pp. xi.–110. Price 15*s.* net.

THE aim of the author is to establish a definite and fixed method of taking radiographs of any particular part of the body, so that it may be all the more easy to recognise any abnormality when present. Such a system tends to uniformity and there is no doubt it possesses very great advantages. The author, who describes his practice very clearly, has designed an x ray couch which makes it easy to carry out his methods. A separate description is given for every part of the body and in each case reproductions of normal radiographs taken at five years, 15 years, and 25 years are given for purposes of comparison.

The illustrations are not of the best but they are good enough for the purpose for which they are intended and the price of the atlas remains within reasonable limits, whereas with the best class of reproductions it would have been prohibitive. The work is a distinctly useful one and will be found of great help to radiographers generally—more especially to those to whom work of this kind is occasional and not a matter of daily routine.

Diagnostics of the Diseases of Children. By LE GRAND KERR, M.D. London and Philadelphia: W. B. Saunders and Co. 1907. Pp. 542. Price 21*s.* net.

IN the preparation of his book the author states in the preface that he has kept one aim constantly in view—namely, that of affording practical assistance to those who are engaged in general practice. Within limits the author has accomplished his purpose but he has had a difficult task, for the diagnosis of disease in children is a matter which depends far more on personal observation and clinical acumen than is the case with diagnosis of disease in adult persons, and the great majority of the works which deal exclusively with this latter subject are admittedly failures. However successful a work on "the diagnostics of the diseases of children" may be, one of this kind must necessarily be tedious if it attains to the length of 500 pages. Dr. Kerr's book is full of expressions and phrases which must constantly offend the ears of those who have a reverence for the purity of the English language, debased as this language often is in current medical literature. Dr. Kerr's aim is to simplify the task of the practitioner in making a diagnosis of disease in children. Quite at random we select an example of the manner in which he does so. We leave it to the reader to judge whether he would himself find much assistance in diagnosing an early case of whooping-cough—and it is only in the early stages that any difficulty presents itself—by a reference to Dr. Kerr's instructions. The passage reads as follows: "If the following points are considered the diagnosis of pertussis is rendered easy and its differential diagnosis is simplified: (*a*) It is contagious (several members of a family or of a neighbourhood are affected usually)

(*b*) the catarrh does not usually extend below the largest bronchi and the eyes are involved; (*c*) the examination of the chest is negative despite the severe cough; (*d*) the cough is distinctly paroxysmal no matter what its mildness or severity and is made worse by housing; (*e*) the coughing spell usually ends with the expectoration of viscid mucus or with vomiting." We are glad to find that those chapters which are concerned with the physical examination of the various regions of the body are of a much more satisfactory character. For instance, the section on the abdomen is excellent, especially that on enlargements of the abdomen, while that on changes in the shape and size of the chest leaves little to be desired except that it contains that often-quotsd mis-statement that the shape of the chest in tuberculous patients is flat. Dr. Woods Hutchison exploded that theory long ago by the measurement of the chest in a large number of cases and he was enabled to demonstrate that such chests tend to keep the infantile characteristics and to remain round.

The arrangement of the book for purposes of reference is not good, although in continuous reading the want of system introduces certain elements of interest. As a work on diagnosis it is very complete and it is well illustrated by a large number of original drawings.

LIBRARY TABLE.

Five Hundred Surgical Suggestions: Practical Brevities in Surgical Diagnosis and Treatment. By WALTER M. BRICKNER, B.S., M.D., Chief of Surgical Department, Mount Sinai Hospital Dispensary, New York; and ELI MOSCHCOWITZ, A.B., M.D., Assistant Physician, Mount Sinai Hospital Dispensary, New York. Second series. New York: Surgery Publishing Co. 1907. Pp. 125. Price $1.00 (4*s.*).—We noticed in THE LANCET of Oct. 6th, 1906, the first appearance of this little book, the authors of which are editor-in-chief and associate editor of the *American Journal of Surgery*. It then contained 250 surgical aphorisms and as many more have now been added, many of which are valuable hints for surgical practice. For example: "A bichlorid of mercury dressing should never be applied on an area of skin on which tincture of iodin has been recently painted. An iodid of mercury is formed, which is highly irritating." We cannot agree with all the suggestions, as that on p. 50, where the "guiac test" is advocated "when it is important to determine the presence or absence of blood in the urine." The remark that black bandages for the hands do not soil surely should have been that such bandages do not appear to soil, and we do not like the word "searcher" as a substitute for bladder sound on p. 50. Although there may possibly be a utilitarian excuse for "fonetik" spelling, we see no reason for the replacement of such a well-established term as "sound" in surgical nomenclature by a new word.

The Practical Medicine Series. Comprising ten volumes on the year's progress in Medicine and Surgery. Edited by GUSTAVUS P. HEAD, M.D. Volume VI.: General Medicine, edited by FRANK BILLINGS, M.S., M.D., and J. H. SALISBURY, M.D. Pp. 259. Volume VII: Pediatrics, edited by ISAAC A. ABT, M.D.; and Orthopædic Surgery, edited by JOHN RIDLON, A.M., M.D.; and GILBERT M. BAILEY, M.D. Pp. 263. Chicago: The Year-Book Publishers. (Sole agents for the United Kingdom: G. Gillies and Co., Glasgow.) 1907. Price 5*s.* each.—In noticing previous volumes of this American series of year-books we have alluded to the scope of the work, which may be defined as an attempt to keep the practitioner's library "up to date" in every branch of medicine for a yearly expenditure of 50*s.* The present volumes contain a representative summary of the year's work in the branches with which they deal, and they show that the editors have kept well in touch with current literature. One-third of the volume on General Medicine is devoted to the specific infectious disorders, typhoid fever and the tropical diseases coming in for the lion's share of these pages; the remainder of the book is devoted to the diseases of the alimentary system. The circulatory, respiratory, and urinary systems have been treated in a previous volume, and the nervous system is not considered in these pages. In the volume dealing with Diseases of Children, on the other hand, the medical diseases of every system are taken into account and sections on hygiene, dietetics, and orthopædic surgery are added. We are surprised to find that no reference is made to the late Professor Budin's advocacy of pure whole milk in the feeding of infants, for however much his methods may disagree with British and American practice his was an authority in no wise to be overlooked. The recent English translation of his great work brought the matter well within the scope of a year-book. It must be remembered that the information given in this series only professes to be that of a year-book and not that of a systematic treatise. The editors have generally shown discrimination in their task and have rightly devoted many pages to the subject of diagnosis and treatment; these are what the practitioner requires of a year-book far more than a digest of contemporary transcendental pathology.

The Treatment of Disease in Children. By G. A. SUTHERLAND, M.D. Edin., F.R.C.P. Lond. Oxford Medical Manuals. London: Henry Frowde and Hodder and Stoughton. 1907. Pp. 311. Price 5*s.*—Under the title of the "Treatment of Disease in Children" Dr. G. A. Sutherland has written a capital little book for the "Oxford Medical Manuals" series. The book is chiefly intended for the young and inexperienced practitioner. The author makes no claim for originality in the advice which he offers; the treatment recommended is that which is adopted by all the leading authorities on the subject, and in no single instance is any measure suggested which appeals to us as calling for adverse criticism; if faults the book has they are the faults of omission and not of commission. The contents are divided into ten chapters, the majority of which are devoted to the consideration of the treatment of the disturbances to which the several systems—the digestive, the respiratory, the nervous, and so on—are liable. In this way the work is carried out in a thoroughly systematic manner. We commend it to those who require a small and trustworthy work on the management of sick children. It is not a book which appeals to the imagination and is not one that is likely to be used except for purposes of reference. We notice that whooping-cough, influenza, and the specific fevers are not included in the list of subjects dealt with.

Abdominal Operations. By B. G. A. MOYNIHAN, M.S. Lond., F.R.C.S. Eng. Second edition. London and Philadelphia: W. B. Saunders Company. 1906. Pp. 815. Price 28*s.* net.—We noticed with approval the first edition of this work and this, the second, edition contains a large quantity of new matter which is of as high a quality as the rest. The book was needed, for there was no recent work covering the ground. The late Mr. J. Greig Smith's "Abdominal Surgery" was the nearest approach to the present work but it has become out of date in consequence of the enormous progress in the surgery of the abdomen within recent years. The author has made no attempt to include every possible form of operation; he has limited himself to a description of the methods which he employs and in this he has done well, for those who consult this work will want to know what methods are the most convenient and useful. It would be difficult to speak too highly of the book.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

PULVERETTES.

(OPPENHEIMER, SON, AND CO., LIMITED, 179, QUEEN VICTORIA-STREET, LONDON, E.C.)

THE pulverette may be regarded as a real advance on the ordinary pill. In appearance it resembles the pill but consists of a thin shell which contains the medicament in the form of powder. On merely pressing the pulverette between the thumb and finger it cracks and the powder is released. In water the pulverette soon disintegrates and the medicament in the form of powder is brought to view. The shell is white in colour and appears to consist of a mixture of sugar and an inert mineral powder. The pulverette obviously secures the prompt administration of a solid drug.

VARIOUS SOAPS.

(EDWARD COOK AND CO., LIMITED, SOAP WORKS, BOW, LONDON, E.)

These soaps are typical of the refinement which modern soap-making has reached. To a large extent laboratory control has brought about this desirable result. Amongst recent introductions of the above soap-making firm, which is careful to select good fatty bases and other materials, is the series of soaps known under the title of "Alicia." Alicia skin soap is an excellent toilet soap absolutely free from uncombined alkali or irritants. It is, in fact, "super-creamed." It is delicately perfumed. The same soap is incorporated with certain medicaments, amongst which may be mentioned carbolic acid, coal tar, and sulphur. Another soap again showing very high quality is the "top sail" carbolic soap. Lastly, foap is a concentrated soap containing borax which is intended for use as a general washing powder. Whilst it is certainly a powerful detergent it is free from injurious agents.

(1) ELIXIR CALCII CHLORIDI; (2) CAPSULES OF HYPODERMIC SOLUTIONS; (3) VAGINAL DOUCHE TABLETS.

(DUNCAN, FLOCKHART AND CO., 143, FARRINGDON-ROAD, LONDON, E.C.)

1. Elixir Calcii Chloridi (Duncan) is a pleasant and palatable solution of chloride of calcium. As is well known the salt is disagreeable to take in the pure state, even in dilute solution. The elixir contains five grains of calcium chloride to the drachm. We have estimated the quantity of the salt and found that it is stated correctly. Calcium chloride is a well-known styptic and has been employed with success in various hæmorrhages, whilst it is also known to exert a tonic action upon the heart, cardiac failure having in some cases been averted by its free use. The objection in regard to the unpleasant taste of the salt is overcome by the use of this elixir. 2. The convenience of having at hand solutions of hypodermic injections ready for use is obvious. The capsule has upon it a point which is easily broken off and then the hypodermic needle may be inserted and the fluid withdrawn. There is thus no time lost in preparing the hypodermic injection. 3. The vaginal douche tablets comprise several convenient formulæ useful in gynæcological practice. We have examined three specimens, the first containing alum and tannic acid; the second alum, sulphate of zinc, and potassium permanganate; and the third zinc sulpho-carbolate and alum. The tablet is dissolved in a pint of hot water for each application.

MORRISICCOL.

(RISICCOL, LIMITED, 31 & 32, BUDGE-ROW, LONDON, E.C.)

We have already referred in our analytical columns to a preparation in powdered form of castor oil introduced by Mr. Demuth. He has now introduced a similar powder containing cod-liver oil. The powder appears to be perfectly dry and is, in fact, dusty, yet ether extracted no less than 35·50 per cent. of oil from it. The powder has no flavour indicating cod-liver oil; the taste is, on the contrary, aromatic. It is very easily administered in milk, porridge, puddings, or stewed fruit, while for infants it may be given in the feeding bottle. The powder consists mainly, we find, of magnesia and contains, further, some hypophosphites. The oil is very finely distributed as seen under the microscope. The tenacious way in which the oil clings to the powder is an interesting feature. It may be fairly assumed that in this state of fine division the oil is readily absorbed.

MALT HOP ALE.

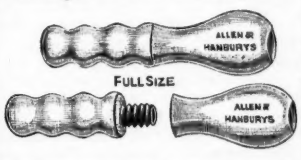
(STRATTON'S BOTTLING CO., THE VALE, ACTON, LONDON, W.)

Pure beer has been defined as an infusion of malt and hops subsequently fermented with yeast. This beer answers that definition exactly, since it is prepared from malt and hops only and without the use of substitutes such as glucose, sugar, or foreign bittering agents. Our analysis gave the following results. Alcohol by volume, 6·55 per cent.; extractives, 4·80 per cent.; mineral matter, 0·25 per cent.; volatile acidity reckoned as acetic acid, 0·078 per cent.; and fixed acidity reckoned as lactic acid, 0·243 per cent. There were no objectionable preservatives present and the beer was in sound condition. It is worthy of remark that the beer did not contain a large excess of carbonic acid gas, a fact which may be taken to indicate that the gas present has not been artificially forced in but is derived naturally from the fermentation of the malt sugar by yeast.

New Inventions.

A NEW OTOSCOPE.

THE improved otoscope which has been devised by me and manufactured by Messrs. Allen and Hanburys, Limited, 48, Wigmore-street, London, W., possesses several important advantages—viz.: 1. The end piece—that is, the piece which is inserted in the patient's ear—is made in several sizes so as to fit a large or a small meatus. 2. It can easily be rendered sterile by boiling or by immersion in antiseptic solution, which is exceedingly important to the surgeon when he has several septic ears to catheterise. 3. It does away with the necessity of possessing more than one otoscope.



Brook-street, W. WILLIAM LLOYD.

A NEW COMMODE BED.

ONE of the greatest inconveniences to which a patient strictly confined to bed is subject is the necessity for getting rid of his excreta. The use of a bed-pan is as a rule very uncomfortable and lifting the patient is a trial both to himself and to his nurses. A new commode bed, a model of which has been shown to us, is well calculated to do away with the inconveniences to which we have referred. The bed is constructed as follows. The wire mattress and the hair mattress both have a hole in them at about the position where the pelvis of the patient comes. The borders of the holes are lined with rubber. There is a corresponding hole in the sheet; if preferred draw-sheets can be used. The holes are filled either by the modified bed-pan or by a rubber-covered cushion. On the under side of the wire mattress are a pair of rails upon which either the cushion or the pan runs. These rails are raised or lowered by a lever. To use the pan the cushion is removed by sliding it out, after it has been depressed by raising the lever, the pan is then slid along the rails and raised into contact with the patient by depressing the lever. When the patient's bowels have acted the pan is depressed and removed, the cushion is slid in in like manner and raised. The pan is of enamelled iron so as to be easy to

cleanse There is no need to move the patient and the parts exposed at the hole can be easily cleansed from underneath the bed. Altogether the invention seems to us to be one of great utility. It can be obtained from the patentee, Mr. G. S. Heatley, 37, Castle-street, Edinburgh.

THE HYGIENE OF WORK IN COMPRESSED AIR.

AT the Society of Arts on Nov. 29th Dr. JOHN SCOTT HALDANE delivered a Shaw lecture on the Hygiene of Work in Compressed Air.

In opening the proceedings Mr. HERBERT L. SAMUEL, Under-Secretary of State for the Home Department, who was in the chair, said that about 30 years ago Mr. Benjamin Shaw left a sum of money to provide prizes in connexion with the saving of life. There had been very few applications for these prizes, the money was accumulating, and the Society of Arts was now applying it to the delivery of lectures on industrial hygiene. In alluding to the fatal accident caused by the fall of a caisson at Blackfriars Bridge on the preceding day Mr. Samuel said that special legislation would probably be required for the protection of men engaged in such work, because a caisson was neither a factory nor a workshop, and the regulations relative to dangerous trades did not at present apply to this employment.

Dr. HALDANE, who spoke for about one and a half hours, commenced with a reference to diving. The ordinary diver's dress was shown, the principal parts being a brass helmet which was fixed to a brass corslet supported on the shoulders. The dress covered the whole body, except the hands. The boots were heavily weighted and additional weights were carried on the back and chest. Air was supplied to the helmet by a pump at the surface of the water and the helmet also contained a telephone by which the diver could speak to those at the surface. In diving the first discomfort that was felt was a peculiar sensation in the ears. This was due to the Eustachian tube being blocked, so that the air pressure was not equal on both sides of the membrana tympani which was consequently made to bulge inwards and might be ruptured. At the depth of 12 or 15 fathoms the breathing was oppressed. Various explanations of this had been given, but the true nature of it was not discovered until 1905, when a committee was appointed by the Admiralty to investigate certain questions connected with diving. This committee found that the proportion of carbonic acid in the air contained in the air cells of the lungs, or the alveolar air as it has been called, varied inversely with the barometric pressure. Samples of this air could be easily obtained for analysis by making a sudden deep expiration through a long tube and collecting the air which remained in the tube. If the alveolar air contained 6 per cent. of carbonic acid at the normal pressure of one atmosphere it would contain 3 per cent. at the pressure of two atmospheres, and about 0·9 per cent. at six atmospheres. Similarly the height of a hill might be roughly estimated from the carbonic acid in the alveolar air of persons at the top. A diver had a sufficient air-supply as long as the air in his helmet contained less than 1 per cent. of carbonic acid. For this purpose 300 cubic feet of air (measured under pressure) were required per man per hour. The use of the diving bell was briefly referred to and in a picture of one which was thrown on the screen a mass of material to be placed in position under water was shown inside the bell hanging by a chain from the top. The other cases in which men worked in compressed air were (1) in more or less horizontal tunnelling through marshy ground or under rivers; and (2) in caissons. A caisson was a large steel tube placed vertically and filled with masonry or cement all except one or two narrow passages by which the men could ascend or descend. Lantern pictures of caissons were shown and an explanation was given of the air-lock by which men and materials could pass into or out of the structure without appreciably altering the internal pressure. When the tunnel was made under the Thames at Rotherhithe the London County Council stipulated that the atmosphere in which the men worked should not contain more than 0·08 per cent. of carbonic acid and about 8000 cubic feet of air were supplied per man per hour—a quantity more than 20 times as much as was required for the divers of the Royal Navy. Air became heated by compression and one objection to giving an excessive supply was that there was a difficulty in cooling it. If, however, blasting operations were being carried on, or if decomposition processes were active in the mud of the bottom, allowance would have to be made in the air-supply for the production of carbonic acid and carbonic oxide in that way. The most common after-effect of working in compressed air was pain in the limbs which usually occurred in less than an hour after leaving the air-lock. The lower animals also probably experienced it, because a goat after exposure to compressed air sometimes held up one of its feet although it seemed to be otherwise in perfect health. Diver's palsy has been known for a long time. It usually passes off but it may become permanent and may lead to lingering fatal disease. The true explanation of its pathology was given by M. Paul Bert about 30 years ago and since that time the subject has been studied by many investigators, including Dr. Leonard E. Hill in this country and Von Schrötter on the continent. It is not produced by pressures less that 2·6 atmospheres of absolute pressure—i.e., 23 pounds per square inch added to the ordinary atmospheric pressure or a depth of 53 feet in sea water. It is due to the blood in the lungs becoming saturated with atmospheric air at the increased pressure, whatever that may be. The excess of oxygen introduced into the blood disappears altogether by entering into chemical combination with the tissues whilst the nitrogen is removed from the blood by simple absorption into the tissues, so that very little of that gas remains in the blood returning to the lungs. Nitrogen was about six times as soluble in the fat of the body as in the blood, so that fat acted as a reservoir of nitrogen. In this way the constant afflux of blood supersaturated with air led to the tissues becoming saturated with nitrogen which on the reduction of the pressure reappeared in the gaseous forms in the capillaries and interstices of the tissues and brought about the various symptoms of pain, palsy, &c., to which the name of caisson disease has been given. If a frog was kept in air at a pressure of 20 atmospheres for ten minutes and was then decompressed bubbles of gas could be seen in its web under the microscope, and these were absorbed again when the pressure was renewed. In order that the question might be investigated fully Dr. Ludwig Mond provided a steel compression chamber which was erected at the Lister Institute of Preventive Medicine in Chelsea, and a great number of experiments have been made with it. With very small animals such as mice no ill-effects at all were produced in circumstances of compression and decompression which would kill a goat. After two hours' exposure to compressed air a goat was practically saturated with nitrogen. In the latter portion of his lecture Dr. Haldane dealt at great length with the various precautions to be observed for the protection of men passing from the open air to compressed air and *vice versâ*. With divers this was accomplished by the manner in which they were lowered to the bottom and pulled up to the surface of the water; in caissons the men remained for the required time in the air lock in which the pressure was progressively increased or reduced, according as they were passing in or out. When the air was at a pressure of only two atmospheres even very rapid decompression failed to produce any ill effect. With regard to decompression it was necessary to remember that there was an important distinction between absolute and relative decompression. For instance, a rapid drop of 50 pounds of pressure from 90 pounds to 40 pounds was of little consequence but a rapid drop of 50 pounds from 65 pounds absolute pressure to that of the open air would be fatal. With divers the old plan was to lower them down slowly and pull them up slowly, but recent investigations showed that if they were working at a greater depth than 50 feet it was better to pull them up quickly to 50 feet where they remained for three minutes; after this they were pulled up 10 feet at a time with an interval of three minutes between the ascents. Pearl divers and sponge divers went down quickly to great depths and rose again with equal quickness; they did not suffer in consequence of this because their stay under water was too short for any considerable absorption of nitrogen by the tissues. The various systems of decompression might be classified as either "stage decompression" or "uniform decompression," the former being much the better of the two. In conclusion Dr. Haldane made a brief allusion to the medical air lock in which men suffering from recent symptoms might, if it was thought advisable, be subjected to recompression.

THE LANCET.

LONDON: SATURDAY, DECEMBER 14, 1907.

The Needs of London Medical Students.

A CORRESPONDENCE is at present running in our columns under this heading which illustrates certain phases of the needs of the London medical students. The examples given are those with which all our readers are familiar, and the letters illustrate at the same time the extreme difficulty of remedy, inasmuch as no suggestion has been put forward to meet the admitted disabilities under which the diplomates of the London Royal Colleges suffer that has much chance of being realised in such a way as to prove a form of speedy relief. Put quite shortly, the position of the diplomates of the London Royal Colleges is this. To pass the examination for the Membership of the Royal College of Surgeons of England and the Licentiateship of the Royal College of Physicians of London they have to work for a time and up to a standard that in certain other centres of medical education would gain them a medical degree. They do not obtain such a degree, only universities being able to confer degrees. Consequently they have only a right to the colloquial use of the prefix "Doctor" and no right to the academic use of the title. This fact must not be made light of. It is a real inconvenience to some medical men not to possess the unchallenged right to place before their names the word "Dr." The essential truth in respect of titles that "A man's the gowd for a' that" may stand good as a whole, and undoubtedly there are many holders of the London Conjoint Diploma who enjoy far larger consideration in professional respect than many university graduates, but this does not alter the fact that the London diplomates may be placed in the invidious position of being approached by the public under a title which in its strict and academic sense does not belong to them. But the London diplomates have a larger grievance than this, granting that they do as much work for their qualifications as certain graduates in medicine. For very many years all the metropolitan hospitals and many of the larger provincial ones have decided that for appointment to their honorary posts on the medical side it shall be necessary for the candidates to possess, perhaps in addition to the Membership of the Royal College of Physicians of London, a University degree in medicine. This means to say that a graduate of *any* University can compete for *any* hospital appointment, while the holder of diplomas can only compete for a few and these not the most important; and, undoubtedly, this is a considerable hardship, though it happens, apparently, to be one which is not becoming more and more obvious. On the contrary, at the hospitals in the medium-sized provincial towns, where the choice among men anxious to serve as honorary medical officers to the charities is not so over large as it must be in the great cities of the kingdom, the more modern tendency is to choose the man best fitted for the post and not the man who accidentally possesses a certain degree or honour diploma, and in some cases where by-laws seemed to forbid this freedom of selection an alteration has been made in the rules. The spirit is one which we have commended and we believe it is on the increase; but none the less the holder of the diplomas of the London Conjoint Board has a distinct and double grievance in that, having joined a London medical school where he has enjoyed a display of clinical material that is without its equal anywhere in the world, he finds at the end of a full curriculum of five years' study (he is fortunate if five years suffice for his labours) that he does not obtain a medical degree, although he would have been able to do so had he entered certain of the Universities. Also he is penalised from obtaining many honourable appointments.

Simultaneously with the letters bringing forward for attention the needs of the London medical student there has appeared in our columns some contentious correspondence in respect of the election which took place on Thursday, Nov. 21st, for the vacant seat on the Senate of the University of London. This election turned upon matters of vital importance to London medical students, matters, moreover, bearing very closely upon the grievances to which we have specifically alluded. One reply, and a very effective one to those who dwell upon the disabilities of the London medical student, is to say that the London medical student has a university of his own—the University of London. All that he has to do is to pass the higher tests necessary to obtain the degree of the University of London, when all his grievances will cease. The remedy, it is suggested, is in the student's hands. The last election to the Senate of the University of London and the recent action of the Senate combine to show that the London medical student has not the chances of obtaining a medical degree enjoyed by members of other universities. The fact is, the London medical student does not take the degree of medicine in the University of London as a matter of course, mainly because the teaching and instruction in the schools at each of the London hospitals are not sufficiently directed to that end. We do not consider it a great grievance to the London medical student that for him to secure a medical degree he should have to attain to a higher standard than perhaps is necessary at some of the other medical centres. He is supposed to have the best of teaching and he has the best of material for his clinical instruction, and there is no reason why he should not obtain at the end of his career the best of degrees. We also find no fault with the severity of the matriculation of the University of London. The examination is more reasonable than it was and it might be made more reasonable yet, but the medical student of the future must expect to find his preliminary education a more strenuous affair than it was of old. Again, the growing tendency of big schools to have a modern side at which boys after the age of 15 or so can begin a proper course of natural philosophy will tend to make an examination like that of the matriculation of the University of London no prohibitive task; the high standard will simply bring into the ranks of scientific medicine the class of man that is most desired. It is not in the stringency

of the examinations of their University that the great difficulty for the London student lies; it is in the disorderly nature of his studies. He is at a woeful disadvantage owing to the fact that his professional work is not in touch with his University. A dozen separate centres of professional education, although at each of them many of the teachers are admirable and all are inspired with a self-sacrificing desire to do their best for the students under them, do not make an ideal system of education. The separate schools do not between them shape out a course along which the London medical student can walk directly towards the degree of his University.

Four years ago this was recognised by all the London medical schools, and the principle of coöperation for the preliminary medical studies was recognised by the Medical Faculty of the University of London, which welcomed the scheme for an Institute of Medical Sciences at South Kensington. Since that time, however, a change of opinion has taken place in the medical schools and to some extent in the Medical Faculty of the University, with the result that a step forward towards consolidation which we thoroughly believe might have been the beginning of a removal of the grievances of the London medical students has been withdrawn. At a meeting of the Senate of the University of London held on Wednesday, Nov. 20th, it was resolved that the £70,000 which had been collected for the formation of a central institute in the preliminary medical sciences at South Kensington should be returned to the donors, the scheme of amalgamation once so remarkably endorsed being held as dead. How far the Faculty of Medicine of the University sympathises with the action of its Senate was rendered doubtful by the election to the Senate on the day following the confession by that body that the concentration scheme had proved abortive of Professor E. H. STARLING, standing as an advocate of concentration. In the first ballot Professor STARLING obtained the suffrages of 118 members of the Faculty out of 237, as against 77 votes given for Dr. NORMAN MOORE and 42 for Mr. WALLIS, thereby, as we have already pointed out in THE LANCET, missing by one vote only an absolute majority over his opponents at the first ballot. In the second ballot Professor STARLING won the seat. Apparently then, at the time when the Senate decides that the chance of a site for a Central Institute of Medicine at South Kensington must be lost, and that the handsome nucleus of £70,000 towards supporting the Institute must be sent back to the donors, the Faculty shows by its votes that its members are in no way opposed to the concentration of the preliminary medical studies.

The Future Water-Supply for London.

ON Dec. 6th the Metropolitan Water Board had under consideration a report of its Works and Stores Committee on the future water-supply of the metropolis. This committee asked the Board to accept the following resolutions amongst others in furtherance of the object in question:—

(*a*) That in the opinion of the Board it is desirable to seek Parliamentary powers enabling it to provide additional supplies from the Thames for as long a period as is economically practicable. (*b*) That in the opinion of the Board it is desirable that in any proposition which may be put before Parliament dealing with the Board's future requirements powers should also be sought to acquire an auxiliary gathering ground for use after increased supplies from the Thames are no longer economically available.

The Chairman of the Board, Sir MELVILL BEACHCROFT, said that the aim of the report was to obtain some expression of opinion from the Board to serve as a guide to the committee in further operations, but he thought that the Board would be most unwise if it were to tie itself down too rigidly to any resolution; and in particular he urged the members of the Board not to take sides in a controversy pitting the claims of the Thames against those of a Welsh gathering ground. Dr. R. M. BEATON, however, probably feeling that this would sooner or later be the point upon which the Board must make up its mind, and believing that there might be particular urgency upon it to do so now, proceeded to move as an amendment to resolution (*a*):—

That after the word "from" the words "Wales and" should be inserted, and that all the words after the word "Thames" should be omitted.

He said that in doing so he did not argue that Thames water was bad but rather that Welsh water was safer. The Works and Stores Committee was asking the Board to go to Parliament with a scheme to supply London with 450,000,000 gallons a day, and it was estimated that it would be economically impossible to obtain this amount from present sources for much more than 50 years. In his opinion the Board had better go to Wales for their supply now, before all the gathering grounds were secured by other towns. This amendment was supported by Mr. HENRY WARD who said that by 1960 the population along the upper Thames would probably be doubled, while the health of London very much depended on the amount of water flowing over Teddington weir as well as on its comparative purity. The chairman of the committee strongly opposed the amendment, which was lost by a large majority, the resolution of the Committee being accepted. Mr. J. P. B. KARSLAKE then moved as an amendment to resolution (*b*):—

That all words after the word "That" should be omitted and the following substituted: "As the increase in population will eventually render resort to some other source than the Thames watershed imperative, the Board views with great alarm the increasing tendency of authorities throughout the kingdom to appropriate water-supplying areas for their particular use, and in these circumstances desires to urge upon Parliament the necessity for regulating the appropriation of water-supplying areas, so that the needs of the metropolis as well as of other populous places may receive due consideration."

This amendment also provided that the President of the Local Government Board should be asked to receive a deputation from the Board on the subject; and that in the event of this request being granted the Works and Stores Committee should be authorised to make all necessary arrangements with regard to the deputation. This amendment was accepted by the committee and carried by a large majority.

We welcome the evidences of foresight and the willingness to grapple with the necessary difficulties of the future which are displayed by the action of the Board in adopting resolution (*a*) and Mr. KARSLAKE'S amendment to resolution (*b*). The enormously difficult and important question of giving to London a pure and adequate water-supply has

been threshed out in our columns for many years, but a term is put to useful retrospect by the framing of the 1902 Metropolitan Water Bill after the exhaustive labours of the Llandaff Commission, its quick passage into law and the consequent acquisition by the newly-formed Water Board of the existing works and undertakings of the water companies at a very great expenditure. We were not wholly agreeable to the passage of that Act, as we felt, in common with a large section of the public and many sanitary authorities, that the public was buying concerns of the value of which it had insufficient information in spite of the thorough manner in which the details of metropolitan water administration had been dealt with in our columns; but since the Board has been created it appears to us to have fulfilled its arduous and responsible functions to the advantage of the public, while this at least has been gained—that the water inspector of the Local Government Board now makes his inspections as a right and not, as in the old days of the private companies, by the permission of various sets of directors. All who were readers of THE LANCET during 1897 and 1898 will remember the publication of the report of our own commission appointed to inquire into the existing sources and means of supply for Water London, and we believe that they will allow that our reports were made in a non-partisan spirit. The question that has now arisen at the Metropolitan Water Board was clearly foreshadowed by us. It may also be remembered that during the sitting of the Llandaff Commission the London County Council, in its strenuous efforts to become the water authority for London, used as an important plank in its platform the bringing of an adequate water-supply from South Wales to supply the metropolitan area. For many reasons, some forcible and some not—as we must take into account that the London County Council is the metropolitan health authority and that good health and good water-supply are inseparable matters—it was decided that the water-supply of the metropolis should be placed under a metropolitan water board and not under the London County Council, since which time the scheme for bringing water to London from Wales has been little mentioned, but it is obvious that it has remained in the minds of the Metropolitan Water Board, or the chairman of the Board would not appeal to its members to view the matter impartially and not "to takes sides in a Wales *versus* Thames controversy." And we welcome the attitude of the Board in the matter. It is true that a definite amendment in favour of a Welsh scheme of supply met with little support, but Mr. KARSLAKE'S amendment which was received very favourably admits that the Board, viewing with alarm the increasing tendency of authorities throughout the kingdom to appropriate water-supplying areas for their particular use, desires the help of Parliament in order that the future needs of the metropolis may not be lost sight of. If this amendment was not framed, and also accepted, with the feeling that the Welsh gathering grounds were being indicated we are much mistaken, and we venture to guess that the Board acknowledges the expediency of a Welsh auxiliary supply for London, while rightly declining at the present moment to tie its hands by any official and formal declaration in the matter.

Few will deny that the water-supply of London is adequate as to quantity and purity for our immediate needs, or that by minute and conscientious care, as well as by extensive engineering construction, every attempt is made so to conserve it. It is, of course, undeniable that certain sewage effluents are discharged into the Thames, and in times of flood a river running through a fertile and populous valley must be liable to pollution; but experience has proved that even at these times by the use of settlement reservoirs and sand filtration the water is made to reach our homes free from any marked accession of water-borne disease. It may prove desirable in our present interests to supplement our water-supply in the metropolis from the clean catchment-area afforded by the Welsh uplands; such a course is much more certainly desirable in the interests of posterity. But to argue for the abandonment of the present service *en bloc* in favour of a new supply from Wales is unpractical as well as a proof of reckless extravagance. It is certain that London has a very fair water-supply, and the intercommunication of systems will probably safeguard any district against a repetition of the East End water famine of 1897. For the moment all is well, but the present supply is proved to be less than enough to carry us through the century, and whether the question of a supply from Wales be again brought up or not in so many words, the resolution of the Board to approach Parliament on the matter is a step in the right direction.

The Surgery of Tuberculosis of the Genito-urinary Organs.

IN the Bradshaw lecture (which is published at p. 1663 of our present issue) Mr. RICKMAN J. GODLEE took for his subject a department of surgery with which he is especially familiar, and the manner in which he dealt with it is refreshing as a very needful corrective to the widespread demand for heroic measures. The title of the lecture might very well have been the conservative surgery of tuberculosis, for no small part of it was devoted to a protest against the indiscriminate removal of tuberculous organs. There is little doubt that nearly all surgeons would agree to the general proposition that if there be a single tuberculous focus in the body, and that focus can be completely removed without material injury to the physiological working of the body, then it is wise to remove it. The difficulties begin when we endeavour to put into practice this counsel of perfection. Can we ever be certain that tuberculosis does not exist elsewhere in the body? The answer must be unhesitatingly, No. We may have very good reasons for thinking, we may be almost certain, that no other tuberculous deposit exists; we may be utterly unable to find the faintest trace of evidence of the presence of tubercle elsewhere, but it is impossible to be quite sure. It may, however, be answered that though we cannot be absolutely certain, we can be practically certain, and in this world we have often to act as if "extremely probable" were equivalent to "absolutely certain." There is some truth in this contention and the surgeon is quite justified in many cases in accepting the very probable for the certain, but this cannot always apply.

The accumulated knowledge of many years tells us that it is extremely rare for tuberculous disease to be confined absolutely to one kidney when the tuberculosis of that kidney has advanced so far as to attract notice. There is doubtless a time when only a single deposit exists in one kidney, but the condition gives rise to no symptoms, it attracts no notice; it progresses in extent and in severity and at last symptoms arise and signs appear sufficient to justify a definite diagnosis and to raise the question of the advisability of removal. By this time, however, the disease must be at least somewhat advanced, it will have spread in all probability to the pelvis of the kidney and to the ureter, and there is a very great likelihood that the other kidney is also affected. The statistics on this point vary greatly. Those who advocate nephrectomy whenever there is no evidence that the other kidney is affected claim that statistics taken from the deadhouse are useless, for by the time that a case ends fatally tuberculosis is sure to have attacked the opposite kidney. This is true; nevertheless the risks of removing a tuberculous kidney are by no means small and, as Mr. GODLEE mentioned, occasionally it has happened that the only functional kidney has been removed, a most appalling disaster. He urges that insufficient attention is paid to the tendency to recovery possessed by the tissues. He quoted several cases which showed clearly that if the patient is placed in the best hygienic conditions it often happens that the tuberculous focus becomes obsolescent. Sometimes recovery is what may not unreasonably be called perfect; in other cases the recovery is less perfect; there is still a discharging sinus, still a little pus in the urine, enough to show that some disease still exists but not enough disease to interfere with the ordinary pursuits of life. We think this reminder of the *vis medicatrix naturæ* in tuberculous conditions was not unneeded, for undoubtedly the tendency at the present time, especially in Germany and America, is to remove all tuberculous foci and the desirability of such a procedure is sometimes doubtful.

We need not follow Mr. GODLEE all through his lecture; it must be read by those who had not the privilege of hearing it for its value to be appreciated properly. We will conclude with a reference to his opinion of the opsonic method of treatment. He considers that the treatment has hardly yet passed out of its experimental stage. Without laying too much stress on the practical difficulties of the estimation of opsonins, though the process is intensely laborious, he thinks that the results cannot at present be reasonably claimed as by any means certain. The treatment is often very prolonged and during all this time general hygienic measures are being adopted, and they should be credited with at least some share in the result. With this opinion we are so far in accord that we feel that the opsonin treatment will need simplification before it can be widely used, and even then it will take its place as only one of the methods available in the treatment of microbic disease. We derived much pleasure from Mr. GODLEE'S lecture, for it represents the mature opinion of a careful observer of long experience. Such an examination of the present state of treatment of any disease will justify to the full the establishment of the Bradshaw lectures.

Annotations.

"Ne quid nimis."

THE LONDON COUNTY COUNCIL AND THE INEBRIATES ACT OF 1898.

As was mentioned in our columns at the time, the London County Council decided last May to terminate its contract with the National Institution for the Care and Reformation of Inebriates, under which habitual drunkards committed from the London police-courts were received into the certified reformatories controlled by that society. This decision seems partly to have been intended as a protest against an order of the Home Secretary reducing the Government grant towards the maintenance of inebriates detained in reformatories, and in part to have been an expression of scepticism regarding the value of such institutions as a means of reclaiming the drunken recidivists of the police-courts. The Home Secretary has since been in correspondence with the Council on the matter and has pointed out that as the action which the Council has proposed to take amounts virtually to a refusal to apply the Inebriates Act within the metropolitan area, it will give a serious check to the progress of this branch of social reform and must have an effect little short of disastrous, not only in London, but also by the force of example in other parts of the country. Mr. Gladstone impresses on the Council that it was the clear intention of the legislature that the Act should be applied to mentally defective and incorrigible persons no less than to reformable drunkards and that part of the expense of maintenance should in both cases be borne by the local authority. He therefore urges the Council to reconsider its decision, or at least to postpone action in the matter until it has had an opportunity of seeing what proposals will be made with regard to the treatment of this class of defectives in the report of the Royal Commission on the Feeble-minded which, it is expected, will be issued in a few weeks. The public control committee of the Council has had the Home Secretary's letter under consideration and, while reiterating its contention that the care of these incorrigible defectives is a duty incumbent on the State and not on local authorities, it has recommended the Council to comply with Mr. Gladstone's request to allow its contract to run for a further period of 12 months, provided that the Government grant in aid be restored to its former amount. If the proposals of the Royal Commission are, as Mr. Gladstone apparently anticipates that they will be, sufficiently clear and feasible to allow of immediate effect being given to them in legislation, it may be hoped that the attitude of the London County Council will force the Government to act with more promptitude than is usually displayed in transferring the recommendations of Royal Commissions to the pages of the statute book, and that a serious attempt will at once be made to deal in a thorough and rational manner with the whole class of anti-social defectives to which the bulk of the so-called "habitual drunkards" belong. In that event the Inebriates Act, however ineffectual as a means of checking chronic alcoholism, will at least have done something to quicken the pace of sociological reform.

DEATH AND SLEEP.

IN his Morison lectures on Nervous Affections of the Heart Dr. G. A. Gibson quoted the following hexameter from Smollett's translation of "Don Quixote,"

"Dulcis et alta quies, placidaeque simillima morti,"

and a note by Smollett upon these words, who says: "There is a fine epigram of which the point is a wish to die in sleep,

'Sic sine morte mori.'" Of these last words Dr. Gibson wished to discover the source, for like so many widely-read men he was unable at once to say whence a perfectly well-known quotation came. In a short paper which appeared in the *Edinburgh Medical Journal* for September he notes that owing to the kind offices of his friend Dr. G. B. Gardiner he had been directed to a letter from Sir Herbert Maxwell in the *Spectator* for 1906, Vol. XCVII., p. 885, revealing the source of the quotation. It is from some lines written for a statue of Somnus by T. Warton, Poet Laureate, 1785. The quatrain runs as follows:—

"Somne veni, et quanquam certissima mortis imago es,
Consortem cupio te tamen esse tori.
Huc ades, haud abiture cito, nam sic sine vita
Vivere, quam suave est, sic sine morte mori."

Canon Ellacombe translated these lines into Greek, and Dr. Gibson gives the Greek version, the last line of which, as printed, makes nonsense owing to the transposition of an υ and a θ, for it appears thus:

Ζωὸς ἄνεθ' ζωῆς, υνήτος ἄνευ θανάτου.

Dr. Gibson concludes his paper by pointing out that the connexion between Sleep and Death has been used by many poets. He quotes from the fourteenth book of the Iliad the passage where Hera sought the aid of Sleep, the brother of Death, in her wooing of Zeus. Dr. Gibson gives Pope's translation, in which, with the latter's usual facility for rendering Homer by an expression which Homer did not use, he calls Sleep the *half-brother* of Death. Homer called Sleep the *κασίγνητος* of Death, which means *brother* and not *half-brother*. Moreover, in the beautiful passage in Book XVI. (which we could wish Dr. Gibson had quoted instead of the other) about the death of Sarpedon Sleep and Death are called twins—

Πέμπε δέ μιν πομποῖσιν ἅμα κραιπνοῖσι φέρεσθαι,
Ὕπνῳ καὶ θανάτῳ διδυμάοσιν.

Il., XVI., 671.

And the one thing that a twin cannot be is a half-brother. Many of our readers will recollect Flaxman's exquisite design of Sleep and Death bearing the body of Sarpedon to Lykia. We have read Dr. Gibson's paper with great interest.

CHELTENHAM TOWN COUNCIL AND ITS MEDICAL OFFICER OF HEALTH.

THE pages of the Cheltenham local press have at intervals for a long time past contained accounts of unedifying discussions relative to what appears to us to have been a most unjustifiable attempt to reduce by £100 the very moderate salary of Dr. J. H. Garrett, the medical officer of health, and this in face of the fact that the addition which it was now sought to deduct had been made some years ago and that in the meantime the responsibilities of the office had materially increased. We do not think that any very useful purpose is likely to be served by a recapitulation of all the fact and fiction which have been brought to light during this prolonged and unseemly controversy. The committee of inquiry which made the recommendation for reduction committed, we think, a grave error of judgment and taste, and the proposal conveyed to the reader more than a suspicion of childishness and want of grasp of administration. Indeed, it is quite clear to us from the numerous discussions which we have perused that, whatever may have been the explanation, personal considerations played an altogether too important part in the recommendations and the subsequent controversies; indeed, the whole explosion has furnished one more illustration of the manner in which a local body composed of a mayor, aldermen, and councillors may suffer from temporary losses of dignity and administrative balance. Dr. Garrett is a well-known and trusted medical officer of health, against whom even those who proposed the reduction had no cause of complaint; in fact, there was general agreement that the officer in question was thoroughly competent and conscientious. We are glad, however, to see from a recent issue of a local paper that this unseemly quarrel has now been ended (although only by the very small majority of one vote) and that the Cheltenham town council has been saved from a very awkward predicament by allowing the medical officer of health to retain the increase granted to him some years since. The whole affair has been one of those little travesties of local government which show that when personal feelings are introduced into a discussion it is often difficult to prevent obvious injustice being done. So far, indeed, as we gather from the reports, it is very doubtful whether, had the sanction of the Local Government Board not been necessary for any alteration, the town council might not have done Dr. Garrett an injustice which it would have much regretted. It is to be hoped that now both sides will allow the amenities of Christmas to render a further discussion of the question impossible.

UNEMPLOYED ON A CORONER'S JURY.

THERE may be many objections, not patent at first sight, to a coroner's jury being drawn from the ranks of the unemployed who pass their time away at street corners or who form a procession and march round the streets. At Eastbourne, however, on Dec. 3rd, a whole jury, with the exception of the foreman, was composed of out-of-works. Fortunately, their duties were light. The fact that they would be so was probably within the knowledge of the coroner's officer. The inquiry lasted but a few minutes, the deceased being a baby who had died rather suddenly from broncho-pneumonia. There were no important points for the jury to decide; everything was perfectly straightforward. But it does seem that, no matter what the circumstances may be, a coroner's jury should be men of some substance—men who can, at any rate, feel their sense of responsibility. Such can hardly apply to the members of the unemployed, whose chief consideration at an inquest will be the attachment of their signature—perhaps mark only in some cases—to the coroner's warrant, going off with the shilling and keeping a watchful eye on the coroner's officer for the next inquest. As a rule, coroners' juries are selected from tradesmen and other residents in the vicinity of the place where the inquest is to be held. This seems right and proper and it is to be hoped that the example set at Eastbourne will not be copied generally. The serving on a coroner's jury during the winter months must not be looked upon as an asset of the unemployed, for as the law is at present constituted the proceedings of the coroner's court are of the first importance to the public.

EPILEPTIC CHILDREN AND THE LONDON COUNTY COUNCIL: A PROPOSAL.

A LETTER which appears in another column signed by Miss Ellinor Close puts forward a proposition of the care of epileptic children by the London County Council which seems to us to be one which the London County Council would do well to consider carefully. As for the estimated cost of the alternative schemes put forward by the special schools subcommittee the first involves a capital sum of £11,000 and an annual sum of £8064, and that for 200 children only. As to the two alternatives suggested in scheme number two ratepayers and others would do well to remember that all estimates put forward by bodies such as county councils, school boards, boards of guardians, and others who have merely to issue "precepts" for money have a wonderful way of working out at a very much higher sum than the original estimate. The report of the subcommittee states that it is difficult to give a closer estimate for land than £5000, and that the annual sum for maintenance per child would work out at

£36. It is quite probable, therefore, that ratepayers would be confronted with a sum of, in round figures, and allowing for excess of expenditure over estimate, of either £55,000 or £79,000 and neither of these schemes would provide for the total number of 319 children affected. The London County Council could easily satisfy themselves as to the good working of the Children's Farm Home Association. The only difficulty which might arise in carrying out Miss Close's suggestion is that some epileptic children do require special accommodation, or at least special care. But as the Education Committee of the County Council has adopted the recommendation of its Special Schools Subcommittee, "that provision should be made for educable epileptic children under the provisions of the Elementary Education (Defective and Epileptic Children) Act, 1889," we suppose that "educable" means that the children in question are not very seriously affected, and therefore we think that Miss Close's letter is one to be reckoned with.

THE EFFECTS OF SULPHUROUS ACID AND SULPHITES UPON DIGESTION AND HEALTH.

THE notable researches of Dr. H. W. Wiley on the action of food preservatives upon the human body have now been extended to sulphurous acid and the sulphites.[1] The relations of sulphurous acid to health are perhaps of greater importance than those of the preservatives already studied, because it is more generally used than any other preservative, particularly in the preservation of wines, dried fruits, syrups, and molasses. In the case of wine the cleansing of the barrels by the action of burning sulphur prevents those secondary changes that would otherwise produce the ripening of the wine. The wine thus appears to be mature within one or two years, whereas its natural maturation requires a longer time. In the manufacture of syrups and molasses it is quite customary to expose the freshly expressed juice of the cane to sulphur fumes. The sulphur dioxide forms more or less stable compounds with the components of the juice, and a part of it passes into the finished product, especially in molasses, low grades of which contain extraordinarily large quantities of free and combined sulphur dioxide. Apricots, peaches, pears, and other fruits are frequently sulphured before desiccation in order to produce a clear and intense yellow colour, to prevent fermentation and decay, to conceal decayed portions of the fruit, to protect from insects and their larvæ, and to hasten the drying process. It is important to notice that highly sulphured fruits are preserved with a lower degree of desiccation than those not sulphured. It is not difficult in this way to preserve a water content of 30 per cent. in the finished product, thus enabling the manufacturer to obtain a greater yield from a given weight of raw material. The organisation of this series of experiments was practically identical with that adopted in the experiments with boric and salicylic acids. The experiments were conducted on a "poison squad," as they are facetiously termed, of 12 young men from the United States Department of Agriculture and a local medical school, who voluntarily assumed the obligations imposed on them to eat only the food provided for them at the hygienic table, to collect and deliver for analysis the excreta of their bodies, to observe regular hours of sleep and work, to indulge in no unusual exercise or study, and generally to pursue the ordinary tenour of their lives. The preservative was administered in two forms, sodium sulphite being administered in capsules to one-half the number, while sulphurous acid was added to the drinking water of the others. The average daily consumption for 20 days was 0·392 to 0·628 gramme of sodium sulphite, or 0·213 to 0·343 gramme of sulphur dioxide. The medical and clinical data, in Dr. Wiley's opinion, show that sulphurous acid and its salts in the free state produce harmful effects, the metabolic functions being disturbed and the health, particularly the digestion, being injuriously affected. In the great majority of cases headache, sensations of dizziness and occasional nausea, indigestion, pains in the stomach, exhaustion, weakness, and in some cases palpitation of the heart, and other unfavourable symptoms were noticed. Of these the most prominent symptom was headache. Abundant evidence was obtained to show that these preservatives unfavourably influence the metabolism. The assimilation of food materials containing organic phosphorus was retarded while the sulphur catabolism was increased. The sulphur balance-sheets showed that the kidneys were called upon to remove from the body nearly, if not all, the added sulphur in the form of sulphuric acid or its salts. Microscopic examinations showed an increase in the number of crystalline and amorphous bodies in the urine indicating the unusual demands made upon the kidneys. The habitual overworking of these organs might be expected sooner or later to produce lesions, possibly of an incurable type. It was also observed that there was a marked tendency to albuminuria. The most important results of these experiments relate to the reduction in the quantity of hæmoglobin and in the number of red and white blood corpuscles, particularly the latter, under the action of sulphurous acid and its salts. The administration of a substance which diminishes to a notable extent these important constituents of the blood is regarded as highly prejudicial to health. Throughout the experiments the variations of the metabolic processes from the normal were never of a character favourable to a more healthy condition of the system. The evidence all points to the fact that sulphurous acid and its salts are purely drugs, having no value as foods and exerting nothing but harmful effects upon the metabolic processes. The conclusion is therefore drawn that the use of sulphurous acid or its salts, in any quantity or for any period, as preservatives of foods should be avoided.

[1] Circular No. 37, Bureau of Chemistry, United States Department of Agriculture, pp. 18, issued Nov. 22nd, 1907.

"THE WASTE OF DAYLIGHT."

"And the best of all ways
To lengthen our days
Is to steal a few hours from the night, my dear."

SUCH was the opinion, or at least the suggestion, of Thomas Moore, the author of the celebrated "Irish Melodies," and in the present year of grace Mr. William Willett of Sloane-square, London, has come forward with a proposal of equal whimsicality. In reading Mr. Willett's pages, from which the heading of the present article is borrowed, we cannot help calling to mind the story of the Irishman who lengthened his blanket by cutting a piece off the bottom and sewing it to the top. The new scheme has the undeniable merit of extreme simplicity, and it holds out the promise of substantial benefits—no less than a saving of about £3,000,000 per annum in the money paid for artificial light and a gain of a whole year (of daylight) in the life of a man aged 28 years. All that is required to secure these advantages is to put forward the hands of the clock 20 minutes at 2 A.M. in each of the four weeks in the month of April so that by the end of the month the clock is one hour and 20 minutes in advance of Greenwich mean time. In the four weeks of September the clock is similarly put back until it once more shows Greenwich mean time. Someone may be prosaic enough to say that all this amounts to nothing more than getting up so much earlier in the summer mornings and leaving off work so much earlier in the summer afternoons. That is, in fact, our opinion and we fear that there is little prospect of the afternoons and evenings being made longer by juggling with the hands of the clock. We

have it on the authority of the Book of Joshua that that patriot made the sun stand still in the midst of heaven for a whole day. There were no clocks in those days and Joshua's performance was sufficiently wonderful. But Mr. Willett with the aid of the clock accomplishes an even more wonderful feat for he makes the sun go forwards and backwards.

THE CHEMISTRY OF THE TOMATO.

In a recent number of the *Comptes Rendus de l'Académie des Sciences* M. J. M. Albahary contributes the results of an analysis of the tomato. The fruit contains the following substances, the figures expressing the percentage composition: water, 93·5; carbohydrates, 3·6; insoluble organic matter, 1·69; nitrogenous matter, 0·95; fat, 0·2; insoluble inorganic matter, 0·11; and total ash, 0·74, of which 0·12 was calcium phosphate. 100 parts of the fresh fruit contain citric acid, 0·69 part; malic acid, 0·48 part; and traces of oxalic, tartaric, and succinic acids. These are present in the free state but in addition the tomato contains traces of acids combined with bases in the form of salts that are insoluble in alcohol and in water.

WEATHER STATISTICS FOR THE AUTUMN: SEPT. 1ST TO NOV. 30TH.

—	Mean maximum temperature	Mean minimum temperature	Mean temperature.	Difference from average.	Days with rain.*	Total fall.	Difference from average.	Number of hours of sunshine.	Difference from average.
	°	°	°	°		ins.	ins.		hrs.
Aberdeen	54	43	48·5	+1·2	46	8·43	−0·44	319	+42
Scarborough	57	45	50·6	+1·2	51	6·69	−1·68	323	+48
Lowestoft	53	46	51·5	+1·0	34	4·97	−2·57	357	+ 9
Margate	59	48	53·5	+1·7	48	7·22	−0·23	319	+ 2
Folkestone	59	48	53·1	+1·4	38	6·27	−2·76	369	†
Hastings...	59	48	53·6	+2·0	41	7·58	−2·15	363	+ 6
Bournemouth ...	59	45	52·3	†	54	14·19	†	369	†
Sandown...	60	50	55·0	†	47	9·81	†	391	†
Torquay	60	48	53·9	+1·3	53	12·95	+0·92	362	+12
Jersey	61	50	55·4	+1·2	56	11·98	+0·42	405	+21
Scilly	59	51	54·7	+0·7	52	11·10	+0·63	350	−11
Pembroke	57	48	52·6	+0·7	58	12·78	+1·72	322	+ 7
Llandudno	58	47	52·3	+1·4	50	7·91	−2·13	398	+26
Douglas, Isle of Man	55	43	49·3	+0·2	47	12·27	−0·96	315	+ 5
Dublin	56	45	50·8	+0·6	50	8·26	+0·46	237	−85
Glasgow	53	44	48·4	+0·9	44	10·44	−0·58	170	+26
Manchester	57	46	51·4	+1·7	52	6·59	†	205	†
Harrogate	55	42	48·0	+0·4	50	11·42	+2·93	293	+ 9
Nottingham	58	42	49·8	+0·9	49	5·58	−1·15	240	†
Birmingham ...	56	44	50·3	+1·6	40	8·79	+1·23	218	− 6
Bath...	59	44	51·2	+1·3	44	8·66	−0·18	382	+99
London	59	46	52·4	+2·0	43	4·68	−3·46	231	+18

* Days with at least 0·01 inch.
† No trustworthy average available.

It can be gathered from the above figures that the autumn, if that season be regarded as commencing on Sept. 1st and ending on Nov. 30th, as it generally is in this country for the purposes of meteorological statistics, was milder than the average in all districts. The divergence from the normal ranged from a mere fraction of a degree at Douglas, Isle of Man, to more than a degree over Great Britain as a whole and to as much as 2° at Hastings and in London. The plus value for the whole of the period was not due, as is sometimes the case, to a great excess of temperature during one particular month but, with a few exceptions, the figures for each constituent month showed about the same excess of warmth. The coolest spot given in the table was Harrogate, with a mean temperature of 48°, and the warmest places were Sandown and Jersey, with respective means of 55° and 55·4°, while along the south-east and south coasts the means varied between 53·1° and 53·9°. At Jersey, Torquay, and Sandown the means of the afternoon maxima were 61° or 60°, or 2° or 3° higher than in London, 6° or 7° higher than at Aberdeen, and 7° or 8° higher than at Glasgow, the coldest spot. Considered as a whole the diurnal range was small; at Scilly it was only 8°, and in many localities on the mainland below 12°. At Bath, however, it was as high as 15° and at Nottingham 16°. The rainfall aggregates showed great variations but in the greater number of cases they were below the average. The largest deficit as well as the smallest total fell to the lot of London, while the wettest districts were parts of the south and south-west coasts and certain regions in the midlands and north. October was abnormally wet in many places, but several parts of the kingdom received little more or even less than the normal amount. September's contribution was extremely small and in most districts the falls for November were also under the average. The number of days with at least 0·01 inch of rain was only 34 at Lowestoft, 38 at Folkestone, and 40 at Birmingham, whence it increased to 54 at Bournemouth and 58 at Pembroke. The total duration of bright sunshine for the three months was generally above the average in Great Britain but at Dublin there was a notable deficiency. Except at Bath, where the excess was as much as 99 hours, and on the north-east coast of Britain, where it was above 40 hours, the plus difference was not great and was mainly in consequence of the very fine September. The resorts along the east, south, and south-west coasts, and also Bath, enjoyed from 320 hours to nearly 400 hours, while London was comparatively dull with 231 hours, Birmingham with 218 hours, and Manchester with 205 hours, while Glasgow had no more than 170 hours. Jersey, the most southern spot, was the brightest of all, its total of 405 hours giving an average of rather more than two and a half hours per day more than that at Glasgow.

THE TREATMENT OF TRIGEMINAL NEURALGIA BY DEEP INJECTIONS OF ALCOHOL.

IN the *Journal of the American Medical Association* of Nov. 9th Professor Hugh T. Patrick and Dr. D'Orsay Hecht have published important papers on the treatment of trigeminal neuralgia by deep injections of alcohol, a method introduced by Lévy and Baudouin at the Salpêtrière. The results obtained in this intractable affection appear to be very satisfactory. The object is to inject alcohol into the sheath of the inferior maxillary branch of the fifth nerve just after its exit from the foramen ovale, of the superior maxillary just after its exit from the foramen rotundum, and of the supra-orbital branch immediately after its entrance into the orbit. Professor Patrick uses the needle devised by M. Lévy and M. Baudouin. It is 1·5 millimetres in diameter, 10 centimetres long, and fitted with a stylet like a trocar except that the needle is sharp and the stylet is blunt. The needle is marked in centimetres from the point up to five, so that the operator may know what depth he has reached. In performing the operation the stylet is slightly withdrawn and the puncture is made with the sharp point of the needle. When the point is well through the skin and subcutaneous tissue the stylet is pushed home so that its end is flush with the needle point, making a blunt instrument for the remainder of the penetration and thus avoiding injury of deep vessels. At the proper depth the stylet is withdrawn, the syringe, already filled, is fitted to the needle, and

the injection is slowly made. The needle is allowed to remain *in situ* for a couple of minutes in order to prevent bleeding from the puncture. Sometimes there is none; if there is, pressure for a few minutes will control it. The following solution is used: cocaine hydrochlorate, one grain; chloroform, ten minims; alcohol, three drachms; and distilled water to half an ounce. Of this two cubic centimetres are injected. For succeeding injections the proportion of alcohol is increased and may reach as much as 90 per cent. As this strong solution is more painful the amount of cocaine in it is doubled. Once the injection is made the pain is very slight. Usually there is only an uncomfortable sense of pressure or tension; sometimes there is diffuse headache. For the inferior maxillary branch the needle is inserted at the lower border of the zygoma, 2·5 centimetres in front of its descending root, which can always be felt and almost coincides with the anterior border of the external auditory meatus. The needle is directed slightly upwards, so as to hug the base of the skull, and a little backward. At a depth of four centimetres it should reach the nerve. For the superior maxillary branch the line of the posterior border of the orbital process of the malar bone is taken as a guide prolonged to the posterior border of the zygoma and the needle is inserted half a centimetre posterior to this point. It is directed perpendicularly to the antero-posterior line but inclined slightly upwards in a direction which would attain at the depth of the foramen rotundum the level of the inferior extremity of the nasal bones. At the depth of five centimetres the nerve is reached. For the supra-orbital branch the needle is inserted at the external margin of the orbit opposite the fronto-malar articulations and passed along the external wall of the orbit to a depth of 3·5 to 4 centimetres. The intra-orbital injection is hazardous on account of the proximity of the optic nerve and motor nerves of the eye. The affected nerve is more often missed than reached by the needle, but though it is desirable to reach it this is not necessary. Alcohol injected near the nerve diffuses so as to reach it. When the needle reaches the nerve pain is felt in its area of distribution and after the injection there is a swollen feeling. If the injection is placed within the nerve sheath the neuralgia will cease at once; if not the injection may have to be repeated. Professor Patrick allows an interval of from five to seven days between injections of the same branch of the fifth nerve. How long the relief will last cannot yet be stated but it has lasted as long as two years. When the pain recurs the injections can be repeated. Dr. Hecht's paper is confirmatory of Professor Patrick's. He finds that the prognosis of complete palliation after one or several injections is excellent. Recurrence may be expected in from six to 12 months but each relapse is rendered milder by the injections and ultimately the paroxysms may disappear.

THE HAMPSTEAD GENERAL HOSPITAL.

LAST week we announced that a general poll of the subscribers of the Hampstead General Hospital was to be taken as a result of a meeting of that body held at the hospital on Dec. 2nd, at which the report of a committee of subscribers was considered. It will be remembered that the report recommended the adoption, with a few changes in detail, of the proposal of King Edward's Hospital Fund that the Hampstead and North-West London Hospitals should amalgamate and that the present staff of the Hampstead General Hospital should be replaced by consultants. This was opposed by the staff and the general body of the medical profession in the neighbourhood and the motion to accept the report was lost by 40 votes to 29. The minority demanded a postal poll of all the subscribers, which has now reversed the decision of the meeting by 195 votes to 187, giving a majority of eight in favour of the report. Not many more than half of the subscribers voted. We are not yet informed whether the decision of this small majority will settle the dispute and we shall defer printing our report of the late meeting until we are in a position to deal fully with a matter involving important principles for the medical profession in London and the welfare of the Hampstead General Hospital.

CROMWELL RELICS.

"WHAT became of Cromwell?" is the title of an article by Professor Churton Collins which appeared in 1881 in the *Gentleman's Magazine*. The question is a vexed one. According to an ancient tradition Cromwell's body was conveyed away immediately after his death, in obedience to his last orders, and was buried on Naseby Field "where he had obtained the greatest victory and glory." According to another account, Mary, Lady Fauconberg, Cromwell's daughter, was able to convey the body away from its grave in the Abbey and to have it buried in her husband's house of Newburgh in Yorkshire, where the tomb, an impenetrable marble one, is still shown. Another corpse was substituted for Cromwell's in the Abbey and it was this nameless corpse which underwent the indignities put upon it in January, 1661, when the putative body was hanged on the gallows at Tyburn together with Ireton's and Bradshaw's, while the head was set up on a pole above Westminster Hall. This head, still transfixed by a spike which was let through the cranium by means of a specially drilled hole, is now in the possession of Mr. Horace Wilkinson of Sevenoaks. It is the head, curiously enough, of someone whose body has probably been embalmed, for the top of the skull has been sawn off in order, presumably, to admit of the removal of the brains. The body to which this head belonged was buried under the gallows of Tyburn, unless, which is probable, the Fauconbergs obtained the body there and carried it off. Death-masks of Cromwell might throw some light on the question of the identity of the head. One of these was in the Museum of the Royal College of Surgeons of England a century ago. It is described by William Clift as "an undoubted cast of the face of Oliver Cromwell." It was presumably a death-mask. Another such is, according to Waylen, in the possession of the Rev. Thomas Cromwell, rector of Michel Dean, Gloucestershire. It may be mentioned that the measurements of the Sevenoaks head are said to correspond with those of extant likenesses and busts of the Protector.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

AN International Congress on Tuberculosis will be held at Washington from Sept. 12th to Oct. 21st, 1908. The Congress is to be divided into seven sections: (1) Pathology and Bacteriology (President, Dr. William H. Welsh, Johns Hopkins Hospital); (2) Clinical Study of Tuberculosis (President, Dr. Vincent Boisditch, Boston); (3) Surgery and Orthopædics (President, Dr. Charles H. Mayo, Rochester); (4) Tuberculosis in Children (President, Dr. Abraham Jacobi, New York); (5) Hygienic, Social, Industrial, and Economic Aspects of Tuberculosis (President, Dr. E. T. Devine, New York); (6) State and Municipal Control of Tuberculosis (President, Surgeon-General Walter Wyman); and (7) Tuberculosis in Animals and its Relation to Men (President, Dr. Leonard Pearson, Philadelphia). Three prizes of £200 each (1000 dollars) will be given: the first for the best evidence of effective work in the prevention or relief of tuberculosis done by any voluntary association since the last International Congress in 1905; the second for the best exhibit of a tuberculosis sanatorium for the working classes; and the third for the best exhibit of a furnished home for wage-earners. Several other prizes of smaller value are

offered for educational leaflets and for special exhibits. We understand that the following gentlemen have already promised to attend this International Congress: Dr. R. W. Philip (Edinburgh), Dr. C. Theodore Williams (London), Dr. Arthur Newsholme (Brighton), Dr. C. H. Spronk (Utrecht), Dr. Turban (Davos), Dr. Gottholdt Pannwitz (Berlin), Dr. Emil von Behring (Marburg), Dr. Calmette (Lisle), Dr. Letulle (Paris), and Dr. S. Kitasato (Tokyo).

A NEW OPEN SPACE FOR LONDON.

THE need for additional open spaces in the overcrowded and manufacturing parts of the metropolis is so great that we gladly endorse the appeal which has been issued on behalf of the people, and especially the children, of Bow for money with which to secure the purchase of the Grove Hall Estate of three and a half acres. This is the last available open space in the neighbourhood and the London County Council has contributed one-half its total cost—namely £4500. The Poplar borough council will contribute £2250 and the remaining £2250 are to be raised by subscriptions. Of this amount £1000 have been given by local manufacturers, residents, and friends and the remainder for which the committee is appealing is required immediately. The scheme has secured the warm approval and practical support of the Bishop of London and the Bishop of Stepney and the Public Gardens Association has contributed £50. The honorary secretary is Mr. T. A. Cook, Bow, London, E., who will give further particulars and receive donations which may also be paid to the London and South Western Bank, Bow, E., or to the London and Westminster Bank in the same district.

ASEPTIC PURIFORM MENINGEAL EFFUSION AND HERPES AFTER INJECTION OF STOVAINE INTO THE SPINAL CANAL.

THE work of M. Widal and other French writers has of late familiarised us with the conception of "aseptic pus"—a sterile puriform effusion in which the polynuclear cells are intact, because they are not engaged in phagocytosis.[1] Such effusions appear to be usually due to toxins the result of microbial action in other parts of the body. They have been observed most frequently in the cerebro-spinal fluid removed by lumbar puncture. Another cause of their production is the injection of anæsthetic drugs into the spinal canal in the production of spinal anæsthesia. At a meeting of the Société Médicale des Hôpitaux of Paris held on Nov. 22nd M. Pautrier and M. Simon reported the following case. A woman, aged 27 years, was admitted into hospital on Oct. 4th last for an infected wart on the sole which at first sight looked like a perforating ulcer. Examination of the nervous system was negative. The wart was excised under spinal anæsthesia. Seven centigrammes of a 10 per cent. solution of stovaine were injected into the spinal canal with aseptic precautions. Previously two cubic centimetres of cerebro-spinal fluid were allowed to escape in order to avoid hypertension, and one cubic centimetre of this fluid was aspirated into the syringe containing the solution of stovaine. During the injection marked pallor, a tendency to syncope, and cold sweats were observed. Complete anæsthesia of the lower limbs was produced. During the night there were vomiting and incontinence of urine and fæces. On the following day the patient was prostrated and could not flex her head. Kernig's sign was well marked. The reflexes were normal, sensibility was intact, and there was no paralysis. The temperature was 103·2° F. and the pulse was 110. Lumbar puncture was performed and yielded turbid fluid which gave a deposit of one cubic centimetre in the centrifugalising tube even without centrifugalisation. The deposit showed abundant polynuclear cells which were absolutely intact; their contours were well defined and the tinctorial reactions of their nuclei were normal. On the 12th the meningeal symptoms were diminished; the vomiting and incontinence had ceased; but there was still rigidity of the neck, the patient was still very prostrated, and Kernig's sign was appreciable. The evening temperature was 101·5°. Lumbar puncture yielded puriform fluid similar to that of the previous day. Cultures of the cerebro-spinal fluid and of the solution of stovaine remained sterile. On the 13th the rigidity of the neck had almost disappeared and the evening temperature was 100·7°. Two groups of confluent clear vesicles on erythematous bases appeared—one on the right half of the upper lip slightly crossing the middle line; the other, smaller, in the right malar region. Lumbar puncture yielded perfectly clear fluid. Recovery was complete on the 20th. This case confirms the good prognostic significance which M. Widal has claimed for intact polynuclear cells in a puriform effusion. As to the cause of the effusion, M. Ravaut and M. Aubourg have shown that the injection into the spinal canal of liquids non-isotonic with the cerebro spinal fluid produces effusion of lymphocytes and even of polynuclear cells. But the solution was isotonic and, as an additional precaution, had been mixed with some of the cerebro-spinal fluid. Kendirdjy in an important article on the results of spinal injections of stovaine[2] distinguishes two kinds of accidents—those which occur during the anæsthetic period and those which follow it. The former he regards as due to the substance injected, and the latter to irritation of the meninges produced by the injected fluid not being isotonic with the cerebro-spinal or to infection, or to the two combined. He attributes a fatal case of meningo-myelitis observed by Koenig to these two latter factors. Other effects observed are headache, pyrexia, and paralysis of the external rectus of the right eye. In the present case, as want of isotonic relation and infection were excluded, M. Pautrier and M. Simon think that the effects were due to a special susceptibility to stovaine, for after subcutaneous injections in some persons only a slight swelling is produced, while in others marked œdema may follow at once. They attribute the herpes to transmission of the meningeal irritation to the ganglion of the fifth nerve. In this connexion it is of interest that recent observations have shown that meningeal lymphocytosis is the rule in herpes zoster, an effect attributed to the converse process—propagation of irritation from the ganglion involved to the meninges.

[1] THE LANCET, May 25th (p. 1446) and Nov. 9th, 1907 (p. 1335).

SANITARY ADMINISTRATION IN TASMANIA.

THE two principal towns in Tasmania are Hobart and Launceston, both of them being seaports. In the annual report of the department of public health of Tasmania for the year ending June 30th, 1907, Dr. J. S. C. Elkington, the chief health officer, specifies for Hobart an area of 1270 acres with 24,654 inhabitants, and for Launceston an area of 3340 acres with 18,226 inhabitants. It would therefore appear that these two towns have an unusually low density of population; perhaps, however, the figures are capable of being presented in more ways than one, for in another part of his report Dr. Elkington states that "the metropolitan district of Hobart, comprising a coterminous residential population of some 35,000 people, is split up into eight independent sanitary areas controlled by eight separate local authorities." In the year 1906 the death-rate per 1000 was 14·6 in Hobart and 14·32 in Launceston. In the smaller towns sanitation seems to have made but little progress; in fact, the report states that "the smaller rural local authorities remain for the most part in a condition of

[2] Presse Médicale, May 11th, 1907, p. 297.

almost primeval insanitation" and that in the great majority of rural districts "local sanitary administration is a mere pretence." The Vaccination Act continues, for reasons beyond Dr. Elkington's control, to be a dead letter. The infectious diseases notified from July 1st, 1906, to June 30th, 1907, after deducting all unsubstantiated cases, comprised 299 cases of typhoid fever, 12 of scarlet fever, 126 of diphtheria, and 15 of puerperal fever. A simple method of obtaining a constant and pure water-supply where no springs or streams are available is practised in some of the drier parts of Southern Tasmania and deserves to be known. Rain is collected on a sufficient area of galvanised iron which is laid on supports on a convenient slope wired off from access by animals and furnished with gutters leading to storage tanks of suitable capacity.

THE INSTITUTE OF ST. PETERSBURG CORPORATION MEDICAL MEN.

THE *Novoe Vremya* has an interesting note on the history of the Institute of St. Petersburg Corporation Medical Men, saying that during the outbreak of scarlet fever and diphtheria 25 years ago this institute was formed with 16 medical men, which number during the 25 years of its existence has been increased to 36. Their duties are to attend professionally the poor of the town afflicted with infectious diseases. In these 25 years these medical men have attended 5,000,000 cases free of charge. The journal closes the notice with a list of the six survivors of the original members.

THE BRISTOL ROYAL INFIRMARY AND THE PLURALITY OF HOSPITAL APPOINTMENTS.

IN our issue of Nov. 30th we gave the main points of the amended rule which had been proposed for the direction of the honorary medical staff of the Bristol Royal Infirmary as to its members holding other appointments. This amended rule had been drawn up owing to the resistance put forward to the original new rule, upon which we commented in our issue of Oct. 12th, p. 1031. The staff accepted the amended rule and it was confirmed by a meeting of the infirmary committee held on Nov. 26th. To be valid the rule had still to receive the sanction of the governors of the infirmary and a meeting of the governors was specially convened for Dec. 5th. There was a very large attendance of governors and Sir George White, president of the infirmary, presided. The proceedings were both amicable and business-like. The new rule was proposed by Mr. J. N. C. Pope and seconded by the Rev. Dr. Glover in speeches of commendable brevity; the motion was put and carried unanimously. The President thanked the governors for having come in such large numbers to a meeting which they knew "was very largely a formal proceeding," and Mr. G. Monro Scott, in moving a vote of thanks to the chairman, said that he thought that the way in which both parties had shown themselves willing to meet half-way proved that they both had the interests of the infirmary at heart. We can but repeat our satisfaction at the matter having been amicably settled and also that the settlement was in great measure due to the firm and united front shown not only by the medical staff of the infirmary but also by the local medical men. Hospital governors and committees are as a rule composed of sensible persons who if they do make mistakes upon medical matters are generally quite open to conviction if the right way is put before them.

THE Secretary of State for India has forwarded a letter to the 11 professors of bacteriology, pathology, hygiene, and tropical medicine whose prompt and prominent action in defending Mr. W. M. Haffkine both in our columns and elsewhere with regard to that gentleman's connexion with the Mulkowal disaster has done so much to bring a most unfortunate dispute to a speedy conclusion honourable to all parties. The letter states, as we announced in our issue of Nov. 30th, that Mr. Morley has recognised the fact that an important body of scientific opinion was in Mr. Haffkine's favour and that he has found nothing in the oft-related circumstances to prevent him from offering to Mr. Haffkine further employment in India.

Lieutenant-Colonel Edwin John Hunter, Army Medical Reserve, and Dr. Charles James Sutherland have been promoted from Honorary Associates to Knights of Grace of the Order of the Hospital of St. John of Jerusalem in England.

A TELEGRAM from the Governor of the Mauritius received at the Colonial Office on Dec. 6th states that for the week ending Dec. 5th there were six cases of plague reported and three deaths from the disease.

Mr. John Cosmo Stuart Rashleigh, M.D. Cantab., has been nominated to serve the office of sheriff of the county of Cornwall.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Dec. 12th, 1829.

CONGENITAL ABSENCE OF IRIS.

THE April Number of Hecker's Annalen, contains the case of a child two years old, in which this malformation was observed, the occurrence of which has been repeatedly called in question.

Caroline S., born in 1826, evinced, from the first days of her life, an extraordinary intolerance of light; the mother examined the eyes of the child, but could not find anything unusual in them, except that they were of a dull-black colour. In May, 1827, she was, for the first time, seen by the reporter, Dr. Behr, who, on close inspection, convinced himself of the total want of the iris in both eyes; in other respects they appeared to be of normal formation, except that the corneæ were a little more convex than usual; the upper eyelids tumid, and the eyebrows very thin; light had become more tolerable; the movements of the eyes were, however, still very rapid and irregular until September 1828, when they became more steady; the eyes were all this time, in other respects, quite healthy, but the intolerance of light continued. It appeared as if the little girl felt somewhat more comfortable in the evening, and she was able to distinguish objects even in complete darkness, but seemed to like bright colours, as red and yellow, more than others; whenever she was going to examine very small objects, she placed them very near her eyes, somewhat below the axis of vision and she appeared to experience some uneasiness when she was looking upwards, especially in a bright light. If the child was placed in a dark room, and rays of light were made to fall on her eyes, they assumed a sort of reddish phosphorescence, like rubies or burning coals. The other senses were perfectly natural.

LONGEVITY.—The *Belfast Evening Telegraph* of Dec. 5th states that Mrs. Margaret McGurk of Carrickmore, county Tyrone, is now over 107 years of age. She was married 84 years ago and became a widow 11 years afterwards. She is the caretaker of Carrickmore Dispensary and courthouse, and moreover earns something by spinning wool. Her appearance as shown in a photograph reproduced by the same journal is not that of a person bowed down by weight of years.—Captain Alexander Tweedale, late of the 1st Bombay Lancers, died at 81, Duke-street, Grosvenor-square, London, on Dec. 7th, in his 102nd year. Captain Tweedale's commission as captain in the Indian army was dated March 6th, 1841.

The Lancet Analytical Commission

ON

PORT WINE AND THE VINEYARDS OF THE ALTO DOURO.

QUESTIONS relating to dietetics and more especially in their relation to the purity of food products have always been the subjects of full discussion in our pages and, recognising the public importance of the purity and soundness of alcoholic beverages, whether used as therapeutic agents, as common beverages, or as what may be termed dietetic luxuries, THE LANCET has from time to time appointed special commissions to inquire into, and to report upon, the production and quality of different wines and spirits. And in continuance of the policy which dictated the appointment of the commission which reported in 1899 "On the Medical Uses of Wine" and was followed by similar commissions which reported in 1900 "On Sherry, its Production, Composition, and Character," in 1902 "On Brandy, its Production at Cognac, the Present Position of the Industry in the Charantes, and the Supply of Genuine Brandy in this Country," and in 1906 "On the Wines of the Gironde, with Special Reference to Claret," we now propose to deal with the port wine industry of the Alto Douro.

THE PORT WINE TRADE.

For a very considerable time the port wine industry has been largely controlled by the members of a prosperous settlement of British subjects which has for some 250 years been established in Porto (O Porto, the *Portus Gallæ* of the Romans). Active trade between this country and Oporto is a matter of old standing. We know that before the year 1654, when trading concessions with regard to the importation of English woollen goods were obtained from John IV. of Portugal by Oliver Cromwell, there were English supercargoes established in Oporto. After Cromwell's treaty came into effect a number of English merchants settled in Oporto and there founded the British Association which had its headquarters at the Factory House, now the headquarters of the port wine shipping industry. In earlier days a certain quantity of red wine was imported into this country from Oporto but the commencing prosperity of the port wine trade may be said to date from the time of Queen Anne, when a preferential duty was allowed on Portuguese as against French and other imported wines.

In spite of the preference thus afforded to it port wine did not at first gain much esteem. In Scotland a popular verse suggested an insidious attempt on the part of the English statesman to undermine the hardy Caledonian constitution by the substitution of an inferior beverage for the claret which had hitherto been the favoured dinner wine; and the line "from humble port to imperial Tokay" in the farce "High Life below Stairs," written by a headmaster of the Merchant Taylors' School, the Rev. James Townley, in 1759, indicates the place which the wine then held in the esteem of the southern part of the Kingdom. But in time the merits of port wine gradually asserted themselves and Wellesley's campaign had doubtless an effect in popularising its use in the earlier years of the last century, so that we find the wine recognised especially as the after-dinner wine of this country. With more abstemious habits which have grown upon us port wine is no longer regarded, in the light of our immediate forefathers, as a beverage for free habitual use; it now takes its proper place as what we have termed a dietetic luxury and as a good and wholesome stimulant under appropriate conditions. And so whilst the amount of port wine drunk by the individual consumer in this country has vastly diminished the proportion of those who on occasion use the wine has probably increased, and the appreciation of port wine by the medical profession as a useful adjuvant in treatment under certain conditions has survived what appears to us its abuse as a dinner wine during the last century. The extent to which port wine is consumed in this country and abroad is shown by the following figures giving the number of pipes (of 534 litres) exported to different countries from Portugal in 1905.

England	25,938	pipes.
Brazil	7,571	,,
Germany	2,822	,,
Sweden and Norway	1,580	,,
Holland	1,458	,,
Denmark	1,210	,,
Russia	1,131	,,
Belgium	767	,,
Other countries	1,955	,,
Total export for 1905 ...	44,432	,,

Except for Brazil with its considerable Portuguese emigrant population, the consumption of port wine is practically limited to the colder climates of Europe, and that considerably more than half of the total produce is taken by our own country.

THE VINEYARDS OF THE DOURO VALLEY.

Port wine is the produce of the vineyards of that portion of the Douro valley which extends eastward from the town of Regoa to the Spanish frontier. The valley has striking physical characteristics. Rising steeply from the river are seen long ranges of hills endowed with a scenic grandeur of their own, a grandeur due to a certain sense of rugged harshness which they inspire in spite of the vineyards that cover them. The hills are of primary formation, of granite, covered generally with a clay schist, but bared here and there. The soil is one which at first it is difficult to associate with its generous grape product. Of humus, as the gardener in this country understands the term, there is little or none; the vines spring from what appears to be a mixture of pieces of stone and slate and what finer soil there is has resulted from the detrition and weathering of these. The soil, however, is remarkably well adapted to absorb and to return for the benefit of the ripening grape the heat of the sun's rays and, as a matter of fact, it is generally found that the drier and more arid the soil appears the richer is the grape that is obtained, and that where in certain places close down to the edge of the river the soil, having some alluvial qualities, is slightly richer, there the vines yield a more watery grape and one less suited to the production of a thoroughly characteristic port wine than the fruit of vines growing on the more difficult and arid soil. Besides the vineyards the steep slope of the hills presents here and there an olive plantation and small quantities of maize and other grain are grown. In order to economise space and for the more orderly culture of the vine the sides of the hills have been terraced out with low stone walls, so that tier over tier the vineyard rises from near to the water's edge to the summit of the range. Where a tributary stream has carved its way through the range of hills which form the north and south banks of the Douro appears a similar succession of terraced vineyards. The exact limits of the port wine producing district of the valley of the Douro are of consequence in relation to what will have to be said as to the substitution of a less characteristic wine for the genuine product of the Alto Douro.

The limits of the port wine producing district some 50 years ago were carefully defined in Baron de Forrester's maps published at the time; the area extended some eight leagues from west to east, and laterally, from north to south, extended over some three leagues of the hill country immediately adjoining the river. The ravages of the phylloxera in the classical Alto Douro district led to the planting of vineyards along the river banks eastwards of the limits assigned by Baron de Forrester, so that now the district extends as far as the Spanish frontier. Da Costa, in his treatise "O Portugal Vinicola," published in 1900, describes the Alto Douro district as a narrow belt of land extending along the Douro river from Barqueiros in the west to Barca d'Alva on the Spanish frontier, together with the vineyards situated on the banks of the tributary streams, of which those of the Corgo, a stream coming from the north, are the most important. The northern and southern boundaries of the district are very irregular but Baron de Forrester's extreme measurement of three leagues from north to south probably still includes all the districts producing genuine port wine.

In connexion with an agitation which has risen amongst the Douro farmers with the view of inducing the Portuguese

Government to define officially the limits of the port wine district the following area has been suggested for the purpose of being scheduled: on the north bank of the Douro the concelhos or administrative subdistricts of Mesaofrio, Santa Marta de Ferraguiao, Villa Real, Regoa, Sabrosa, Alijo, Carrazeda de Ancises, Mirandella, Murca, Valpassos, Villaflor, Alfandega da Fe, Torre de Moncorvo, and Freixo de Espada, and on the south bank of the river the parish of Barro and the concelhos of Larnego, Armamar, Taboaco, S. Joa da Pasqueira, Meda, Figueira de Castello, Rodrigo, and Villa Nova de Fozcoa. The area thus defined includes all the districts in which genuine port wine is produced and also possibly some vineyards in some of the concelhos which yield only an inferior class of wine. There is, however, no doubt that a decree defining these districts as those the produce of which alone may be exported as port wine would be a matter of the utmost benefit to the Douro farmer, to the wine shipping industry of Oporto, and to the public in our own country who constitute the all-important section of the customers of Portugal in the matter of her wines.

THE MANAGEMENT OF THE VINEYARDS.

But little need be said as to the routine management of the vineyards of the Douro; it does not differ in essential detail from that which obtains elsewhere. The vintage is over by the middle of October, but the care of his vines occupies the Douro farmer with but short intermission throughout the year. For the next few weeks after the vintage there is little to be done. When the leaves fall from the vine and the sap ceases to run pruning begins. The vines are generally pruned back so as to produce a bush with something of an umbrella or mushroom shape, so that when in bearing the bunches of grapes hang low and receive the maximum amount of reflected heat from the stony ground, whilst at the same time they are protected above by the foliage from the direct rays of the sun. In some vineyards the espalier method of training the vine is employed; in other places the vines are trained on thick stakes about two feet in height. Grafting is usually performed in the autumn, but in some of the vineyards of the lower part of the Alto Douro it is carried out in the spring. Between November and March new vineyards are planted and any replanting in established vineyards which may be necessary to replace vines which have died is attended to. During the late autumn also an *escava*, or shallow circular trench, is hollowed out round each vine for the purpose of retaining moisture.

During April and May the soil of the vineyard is turned over to a depth of about 10 inches by means of a two-pronged hoe. Towards the end of May the whole surface is lightly hoed over in order to get rid of weeds. In June the vines are sulphured to check any growth of *oidium*. A little later the vines are treated with Bordeaux mixture to protect the plant against mildew; this is usually done quite at the end of June and the process may have to be repeated. During July and August the *baga*, the grape berry, is ripening and there is little work to be done in the vineyard beyond an occasional spraying of the vines with Bordeaux mixture if the season is a wet one. Labour for the vineyard is supplied principally by Galegos, a powerful, hardy race from the Spanish province of Galicia. The indigenous population of the Douro valley is composed of an impoverished, weakly people, but little suited for the task of dealing with the unpromising soil of the vineyard and the fatiguing work of the vintage.

THE VINES OF THE DOURO VALLEY.

In the Douro district there may be still a few vineyards in which native vines have survived the work of the phylloxera and these would be chiefly of the *Mourisco* species. All new plantations have been made up with American stock upon which European vines have been grafted. The American stocks, coming as wild vines from central and southern America, are mainly of the *Riparia* and *Æstivalis* type, the former suited to the damper and more pronounced clayey soils, and the latter to warmer, lighter, and drier soils. There are numerous varieties of Portuguese and other European grapes which have been grafted on the American stock and the effect of this extensive grafting has been that whilst in the general opinion of the wine-growers the nature and character of the berry have been little, if at all, modified the yield has been distinctly increased. The American stock is planted in the winter—that is to say, from November up to the end of March—and grafting is carried out in the following autumn if the growth of the stock is sufficiently advanced. In some vineyards grafting is purposely deferred to the following spring. The grafts are usually made about six or eight inches below the surface of the ground, rarely as deep as ten inches. Vines grafted in November will usually yield one or two bunches of grapes in the following season; the yield is better in the second season but the vines do not bear freely until the third season after grafting. In planting new vineyards very deep trenching, to a depth of even ten feet, has apparently produced excellent results in the way of increasing the yield.

The nomenclature of the different strains of the vine which are cultivated in the Alto Douro is very varied. The Visconde de Villa Maior, in his book "O Douro Illustrado," gives a list of the following 27 *céphages* in Portuguese *castas*, or strains of vine suitable for the making of port wine. The *céphages noirs* are used for the red port wine which is consumed in England and the *céphages blancs* for the white port which is consumed chiefly in Northern Europe.

1. *Céphages noirs.*—(1) Alvarelhão, two varieties; (2) Bastado; (3) Casculho; (4) Cornifesto; (5) Donzellinho, three varieties; (6) Entreverde; (7) Mourisco tinto; (8) Mureto; (9) Nevoeira; (10) Péagudo; (11) Souzão; (12) Tinta amarella; (13) Tinta caryalha; (14) Tinta castellôa; (15) Tinta francisca v. franceza; (16) Tinta lameira; (17) Tinta morella; (18) Tinta pinheira; (19) Tinta cão; and (20) Touriga.

2. *Céphages blancs.*—(1) Codiga v. Malvasia grossa; (2) Diagalves; (3) Dona branca; (4) Gouveio v. Verdelho, two varieties; (5) Malvasia, several sub-varieties; (6) Muscatel, several sub-varieties; and (7) Rabigato v. Rabo de Ovelho v. Ostreito.

In da Costa's book "O Portugal Vinicola" a list of 17 strains of vine grown in the Upper Douro region is given but there appears to be no end to the varieties and sub-varieties of grape which have been used here; at one *quinta* a list was given of 20 black and eight white grapes which had been cultivated in the particular vineyard at different times. It may be pointed out that the port wine of a particular shipping house is not produced from the juice of any one variety of grape but that it is to the blending of the must of different grapes that differences in the characteristics of the wines for the same vintage of different shipping houses are due.

As to the best kind of grapes for the production of port wine there is a certain variance of opinion; one house will maintain the superiority of one blend of musts while another will be equally satisfied with the results of another blending. Thus da Costo writes: "Combiné avec le Bastado, l'Alvarelhão forme la base de la composition des meilleurs vins de Porto, il est aujourd'hui répandu abondamment dans toute la région, jusqu'à Barca de Alva, et même fait partie des meilleurs vignobles sur d'autres points du pays," and, on the other hand, the head of one of the oldest port shipping houses in Oporto, one with long experience in the production of port wine, stated to our Commissioners that the Alvarelhão grape was fit only for making *consumo*, the completely fermented *vin ordinaire* of the country, and that the particular vine was not grown at all on his *quinta*.

THE VINTAGE OF THE DOURO.

The Douro vintage usually begins on or soon after Sept. 21st, later in backward years, but never later than the first week of October. The vintage time for the whole Douro district extends over about 21 days; in individual vineyards the operations of the vintage occupy from a week to 10 days. The work of the vintage is carried out under the supervision of the large wine-shipping houses of Oporto. The firms have each their own *quinta* and vineyards in the Alto and Superior Douro, and for the time there is a general exodus to these from Oporto. During a busy fortnight or three weeks the production of the wine is supervised not only in the vineyards belonging to the Oporto houses but in the more extensive vineyards of the Douro farmers whose produce is bought up by the Oporto houses each year and worked under the personal supervision of their representatives. The older and well-established shipping houses trade year by year with the same farmers and so insure a uniform and high standard of excellence in the product of the vintage operations.

The grapes are picked by Galegos and carried up to the *lagar* or treading vat. These *lagares* are built up of thick stone and have a depth of about two feet. When the *lagar* is full of grape it is entered by a number of Galegos and worked by foot for about 36 hours. The progress

of fermentation is carefully checked by observation of the specific gravity of the must and at a certain stage, which appears to vary slightly according to the habitual practice of different houses but which is generally reached when the specific gravity of the must has been lowered to about 1, the must is run off and collected in *tonnels* (huge casks). After the must has been run off the residue in the *lagar* is moderately pressed by mechanical means and the outflow is added to the *tonnel*. Sufficient "southern" brandy is then added to the contents of the *tonnel* to arrest the predominating fermentation and the vintage work is over. The treading of the grape by foot appears at first sight to be a somewhat crude practice but the use of this method of expressing the grape juice has this advantage, that the progress of fermentation can be very readily controlled: if fermentation is progressing too slowly, then more men are ordered into the *lagar*, so that the temperature may be raised thereby to the optimum for the process. After a journey through the Douro in vintage time the visitor is considerably impressed by the high degree of efficiency which may be attained by long empirical experience without, in some cases, much scientific knowledge of the processes which have to be controlled. To anyone fresh from the laboratories it would appear at first that the better way would be a mechanical breaking up of the grape berry combined with a regulation of the temperature by one of several automatic methods which might be adopted. After carefully watching the empirical operations and noting their result, however, it must be confessed that under the conditions under which the port wine industry is carried on the introduction of more "scientific" methods such as have been indicated would in the first place be commercially impracticable because of the heavy incidental expense and then that even with the introduction of more mechanical, or scientific, methods of working it is doubtful whether the final result would be the production of a better wine than the port wine which has for more than a century been produced from the Douro vineyards by empirical methods controlled by accurate observation.

THE MATURING OF PORT WINE.

At the end of the vintage port wine represents incompletely fermented grape juice with an addition of sufficient brandy to check any further active ferment changes. In some vineyards and in certain years when there has been a scarcity of grape brandy pure alcohol has been used for the arrest of fermentation, a substitution to which reference is made later. During the autumn and winter the wine is stored in *tonnels* at the vineyards. When the wine "falls clear" it is drawn off into pipes and despatched during the spring by boat or train to Oporto. It is not unlikely that a certain amount of slow fermentation occurs in the *tonnel* during the autumn after the vintage but the principal change which occurs in the wine during its storage in the Alto Douro is its "clearing" by sedimentation, together with the precipitation under the influence of the comparatively cold winter of a certain amount of resinous and other substances which were held in solution at the higher temperature of the vintage time. On its arrival at Oporto the wine is stored in the wine lodges of Villa Nova de Gaya, a suburb situated on the south bank of the Douro opposite to Oporto. The wine lodges are simply huge sheds in which the pipes of wine are stored and the average temperature in them is considerably higher than that of the places up the valley where the wine was stored during its first winter and, of course, considerably above that of Great Britain and the northern parts of Europe from which the principal demand for the wine comes. Consequently occasional trouble arises when the wine is shipped from Oporto to a colder climate from a fine precipitation of matter hitherto held in solution at the higher temperature. In the case of a "vintage" port which is shipped to London at an early age and allowed to mature in bottle in our climate no trouble arises, since during the prolonged period of maturation in bottle any such fine precipitated matter has ample time for settlement before the wine comes into use, but in the case of the "tawny" port which is matured in wood at Oporto and shipped to this country ready for use the presence of any "cloudiness" from the fine precipitation is a serious drawback. This matter is mentioned specially because the only inducement which the wine shipper apparently has to add any excess of brandy above the absolute amount necessary to arrest fermentation is the occasional occurrence of this cloudiness in wine shipped for immediate use and which is supposed to be prevented by the addition of alcohol.

Probably it was in this difficulty of preparing a wine which would stand immediate transfer from the warm climate of Oporto to that of the colder north that the custom of shipping port to Newfoundland preparatory to its appearance on the English market had its origin. Newfoundland port wine is not often heard of nowadays but formerly it was in high repute. From long ago there has been an extensive trade in salt cod-fish between Newfoundland and Oporto, and in former days many wine shippers made use of the vessels outward bound from Oporto, and empty, to convey their wine to Newfoundland where it was stored for a while and exported as required. The low temperature of the Newfoundland winter secured effectually the precipitation of all matter which was precipitable on a lowering of temperature and so a clear, bright wine in excellent condition could be put on the English market ready for immediate use. With altered trade conditions at Oporto this temporary storage of wine in Newfoundland is no longer utilised generally, although we believe that there is still one wine shipping firm in Oporto which owns storage premises there.

After its arrival at the wine lodges of Villa Nova the wine undergoes different treatment according to its future use, whether it is to be a "vintage" wine or whether it is to be matured in wood at Villa Nova and exported to be retailed as a "tawny" port or a wine "from the wood."

We may consider first the "vintage" wine. When the vintage has yielded a wine of exceptional character and excellence an agreement is come to between the principal shipping houses that the wine is to be treated as a "vintage" port and after having been kept under observation for a time in the wine lodge it is shipped in wood to London, usually about two or two and a half years after its vintage. It is then bottled and laid down until sufficiently matured for use. As to the length of time which a port requires for full maturation in bottle there is room for some difference of opinion; much doubtless depends upon the intrinsic character of the vintage. But it is at any rate worth while to recall the opinion of the author of the Ingoldsby Legends, an opinion formed at a time when the study of the qualities of port was followed more assiduously than at the present time:—

> "First and foremost, then, Gentlefolk, learn from my song,
> Not to lock up your wine, or malt liquor, too long.
> Though port should have age; Yet I don't think it sage
> To entomb it, as some of your connoisseurs do,
> Till it's losing in flavour, and body, and hue;
> —I question if keeping it does it much good
> After ten years in bottle, and three in the wood."

In ordinary years the yield of the vintage undergoes an altogether different treatment. The wine is stored at Villa Nova and carefully examined from time to time. As the wine loses in alcoholic strength it is "lotted" by the addition of small quantities of old Douro grape brandy in order to insure the keeping qualities of the wine and from year to year it is refreshed by the addition of blends of other Douro vintages in order to obtain the particular body and flavour which are affected by the shipping house which is maturing the wine. Since any one shipment of a wine of this class represents a blend of different vintages it is impossible to state its actual age, but starting with the wine of a given year this kind of port will usually be in a proper condition for use after ten years in the wood and it is doubtful whether any definite improvement in character can be obtained after 15 years in the wood. After being fully matured at Villa Nova the wine is shipped to London ready for immediate use as "tawny" port, or on its arrival there may be bottled and laid down for a further maturation to be sold as an "old bottled" or "old crusted" port.

THE "FORTIFICATION" OF PORT WINE.

The next matter with which we have to deal is one with regard to which much popular misapprehension prevails, that is to say the so-called "fortification" of port wine with brandy. It is sometimes said that brandy is added to port wine for the purpose of deliberately increasing its alcoholic strength and so that it may be the more readily acceptable to what is supposed to be the British taste. It is sometimes added that such "fortification" is unnecessary inasmuch as port wine of the alcoholic strength which is shipped to this country is not drunk, so we are told, in Portugal. To deal with the latter point first—"vintage" port certainly is not drunk in Portugal to any extent for the simple reason that it is scarcely obtainable there. Very little bottling is done in Oporto and practically all the yield of "vintage" years is shipped to London. But port wine from the

wood of precisely the same character as the best wine of that description which is shipped to this country is consumed freely by the British colony in Oporto and also by such of the Portuguese as have a taste for this class of wine. Speaking generally, the Latin native of the country prefers a lighter wine of the *consumo* type and of a totally different character from that of port wine; he prefers a wine which can be drunk in the large quantities agreeable to many in a warm climate. The members of the British colony do, however, habitually drink port wine "from the wood" with their meals, a fact which at once suggested a test of the reputed connexion between port wine drinking and gout. And then it appeared that there was remarkably little evidence of the existence of gouty affections amongst the British population of Oporto. The medical visitor to Oporto is impressed rather by the fact that the habitual and moderate drinking of port wine is not incompatible with a vigorous and apparently healthy life even under the somewhat enervating climatic conditions and he will probably come to the conclusion that the free confidence of an earlier generation of this country in sound port wine was, although we may regard it as having been exercised injudiciously, not altogether misplaced.

Then with regard to the mistaken idea that port wine is fortified to an unnecessary extent with brandy in order to render it the more suitable to the taste of the British market. It may be stated to the contrary that the chief object of the Oporto shipper is to place his port on the market at the lowest alcoholic strength which is necessary to maintain the character of the wine. Apart from commercial reasons which would check any unnecessary addition of extraneous alcohol the Oporto wine shipper is well aware of the general opinion of the medical profession in this matter and knows that the most effective check to the continued popularity of port wine would be any unnecessary "fortification." The addition of a certain quantity of extraneous alcohol to port wine is, as will have been seen from what has preceded, a necessity for the production of the wine. With most other wines the grape must is allowed to ferment out and so sufficient alcohol is formed to insure keeping properties. But port wine is produced differently: here there is an attempt to preserve something of the original flavour of the grape by the arrest of fermentation before that process has come to its natural end and so sufficient alcohol must be added to the incompletely fermented grape juice to supply the deficiency resulting from the arrest of fermentation. Under former conditions the arrest of fermentation was effected by the addition of brandy produced by distillation of the fermented must of the Douro grapes similar to those from which the wine itself came. This was at a time when the demand for port was quantitatively less than it is at present and under those conditions there was an exact homogeneity between the ethers and other secondary products of the partially fermented port and those of the added grape brandy. At the present time the fermentation of the port must is arrested by the addition of young "southern" brandy from the districts to the south of the Douro where the grape juice is of less value; the brandy matures side by side with the partially fermented wine must and any loss of alcohol which occurs during maturation in the wood is made good in the wine lodges by the addition of small quantities of old Douro grape brandy.

But in years when, owing to destruction of the vines by the phylloxera, brandy became scarce or even impossible to obtain, pure alcohol has been sometimes used as a substitute; and it is alleged that at least one celebrated "vintage" port dates from a year when no such supply of grape brandy as would have been necessary for treating all the wine must was available. However this may have been, it is certain that from a medical point of view the substitution of pure alcohol for grape brandy in the production of port wine is a distinctly objectionable process. The value of port wine, again from the medical point of view, does not depend upon the amount of alcohol which it contains but rather is lessened in proportion to any excess of it. The use of grape brandy enhances the final value of the wine in ethers and other secondary products to which we are inclined to attribute the medicinal efficacy and importance of wines and spirits generally, whilst by the use of pure alcohol there is merely an addition of the less desirable constituent of a wine without any increase in the quantity of the useful elements. It is difficult to ascertain the extent to which pure alcohol may have been substituted for grape brandy in certain years of exceptional stress, but it may be taken as certain that the vintage wines of the more reputable Oporto houses have invariably been prepared with the grape brandy. With ports shipped by some of the less substantial firms, and with nameless ports such as come to the public through the medium of "wine sales," there can be no certainty as to the nature of the form of alcohol which has been used for this purpose. At the worst the wine has been, by the use of pure alcohol, deprived of a certain element of medicinal value, whilst in many years grape brandy having been cheaper in Portugal than the imported alcohol even the cheaper ports have retained their proper characteristics in this respect.

This so far relates to the addition of extraneous alcohol necessary for checking the fermentation of the grape must and to the replacement of alcohol lost during maturation in the wood. But in certain circumstances and in the case of a wine of poor quality there may be another addition of extraneous alcohol which is probably nearly always added in the form of grape brandy. If a particular lot of port which has been matured in the wood remains of "dull" appearance it is customary to add a small quantity of brandy to improve the aspect of the wine and to insure that there shall be no cloudiness of it due to the fine precipitation which may occur when an inferior grade of port is shipped into the colder climate of this country. But even here, as in the former case, motives of immediate economy, no less than the interest of the shipper in keeping the total amount of alcohol in his wine at the possible minimum, afford the consumer a sufficient guarantee against any careless over-alcoholisation of the port.

PORT WINE AND IMITATION "PORTS."

We have been writing hitherto of genuine port wine, the produce of the vineyards of the Alto and Superior Douro; but the term "port" is sometimes misused commercially to designate, with varying degrees of dishonesty, sundry other kinds of wine and spurious wines. Port wine, as produced in the district indicated, is of two kinds—the red wine to which the name "port" is commonly referred in this country and which has up to now been dealt with in this report and white port or *vinho branco* which is but rarely consumed in this country but which is in large demand in Russia and other parts of Northern Europe. The red port is produced from black grapes throughout the Alto and Superior Douro districts, what may be termed distinctively the "fine" ports coming more particularly from the vineyards which line the immediate banks of the river above the limit of the alluvium. The white port, produced from the white grapes growing in the same district, is a full-bodied and usually sweet wine of what we would term a "liqueur" character which is matured in the wood at Villa Nova by much the same methods as those used for the production of tawny port. This wine owes its rich and somewhat heavy flavour chiefly to grape of the muscatel strains; it is probably often sweetened artificially in order to suit the tastes of the markets in which it is in demand and is probably at its best after some 15 years in the wood.

It may be mentioned also that a certain quantity of a good, fully fermented red wine of a type something between the burgundy and claret types, known as *consumo* or *commum*, is produced in the port wine district. Much larger quantities of this wine, however, are produced in districts lying to the south of the Douro. The wine constitutes the ordinary beverage of the middle and wealthier classes in Portugal and is largely exported to Brazil. *Consumo* will not, however, stand export to the cold climate of this country and we found that a wine which was distinctly palatable in Oporto could only be described as nauseous after it had been kept for a few weeks during an unusually cold autumn here; the wine had not obviously altered in appearance but the different impression which it produced on the palate suggested either some subtle variation in the taste of the consumer under different climatic conditions or else some considerable alteration in the chemical composition of the wine without any obvious change in its general appearance. To complete the catalogue of the wines of the whole Douro district we may just mention an inferior, naturally acid, fully fermented wine, *vinho verde*, which is produced by the Portuguese farmer in the district lying between the Alto Douro and Oporto from incompletely ripened grapes.

Having referred to genuine port wine, we may next mention a class of wine, shipped from Oporto, which consists of a blend of Alto Douro wine with "southern" wine, the latter produced in the districts lying between Oporto and

Lisbon and brought into Oporto for the sophistication of the natural Douro wine. As to whether this blended wine can properly be shipped from Oporto under the name of port wine has, because of important questions of internal economy, been fiercely discussed in Portugal; but the consumer in Great Britain will have little difficulty in coming to a decision on the point. Port wine owes its peculiar characteristics not only to the special method of the vintage, the arrest of fermentation at a certain stage, and to the skill which, in the case of wine matured in the wood, is bestowed on its treatment in the wine lodges, but probably even more to the peculiarities of the vines of the Alto Douro, peculiarities which are certainly dependent upon the special nature of the soil on which the grape is cultivated. And wines grown on the sandy or clay soils of the districts south of the Douro do not yield a produce possessing these characteristic properties. No one possessed of the ordinary senses of taste and smell could fail to distinguish between a Lisbon "port" and the pure produce of the Douro district, and the substitution of the cheaper and inferior product as "port" is in every way to the detriment of the consumer. The methods of production may be similar, but the grape is different; and how much depends upon soil may be judged by comparing the flavour of a Douro grape brandy with the spirit similarly produced from French grape. The position of this question is fully set out in Mr. Consul Grant's Report on the Trade of Oporto for the year 1905:—

"The question of strictly defining what is port is a very difficult one. Although most people with any knowledge of the subject would say in a general way that port is Douro wine, and although at a recently held meeting of the British shippers of port wine a resolution was passed, with very little dissent, expressing the opinion that the true definition of port was wine exclusively from the Douro, it cannot be denied that a large quantity of wine not from the Douro district has been and is being shipped as port. Up to the year 1865 restrictions imposed by the Portuguese Government prevented wines other than of Douro origin from being shipped from Oporto, and also, until the railways were constructed, the cost of transport of wine from the south of Portugal would have been very heavy. In 1865 the phylloxera began to make its influence felt in the Douro and subsequently reduced the production of that district to such an enormous extent that merchants wishing to supply wines at a cheap price began to buy some from other districts as well as from the Douro, and the general opinion is that had they not done so the price of port wine would at one time have become excessive and would have led to a consequent falling-off in the consumption. During the last 20 years replanting in the Douro has gone on steadily and now that they are in a position to supply the quantity of wine required for export Douro farmers are naturally very anxious that the shippers should buy only from them the wine to be shipped under the old name. In the meanwhile, however, a regular trade having been established in wines from other districts, chiefly from the South of Portugal, either alone or blended with Douro wine, and the Douro, owing to greater expenses in planting and cultivation, being unable to compete in price, some shippers are also naturally opposed to any sort of restriction. Most shippers seem agreed that if a distinction could be made between Douro and other wines, only the former being entitled to the name of port (if this distinction could be effectually carried out not only in Portugal but also in the United Kingdom and other countries), the trade would be benefited thereby and public interest protected, inasmuch as the consumer who asked for port would get a genuine Douro wine. In this connexion the General Order of the British Customs, restricting the use of the word 'Port' to Portuguese wines unless such designation is accompanied by a declaration of the country of origin, has given great satisfaction at Oporto though not considered as going far enough, and the Douro farmers, as stated above, claim that the name should be restricted to Douro wine."

After blended wine of this description, sometimes described in catalogues of wine sales as "Oporto port" and "Lisbon port," we come next to the genuine vineyard produce of countries other than Portugal which is prepared ostensibly, and so far with commercial integrity, in imitation of port wine. Thus we have Spanish "port," or Tarragona, Cape "port," Canary "port," Cyprus "port," Palestine "port," Australian "port," Californian "port," Algerian "port," and the like. All these are the unsophisticated produce of the vineyards of the respective countries whose names they bear, and most of them are produced by methods more or less closely similar to those employed in the vineyards of the Alto Douro and the wine lodges of Villa Nova, but in each instance certainly without the long accumulated experience in wine production which enables the shipping houses of Oporto to produce a wine with the excellent qualities of port. Nor, so far as we can ascertain, are any of these wines produced from grape which might be expected to yield a wine of the character of that produced from the vines of the Alto Douro, grown on a volcanic soil of exceptional character. We have examined a number of these so-called "ports," but none of those examined possessed the general flavour characteristic of Alto Douro wine, and some of them represented somewhat crude efforts at wine production. With regard to this class of wine generally we may say that some of them, if sold on their own merits and with their source plainly indicated—as in some instances it is—are deserving of public attention; but of course they should not be sold as genuine Alto Douro wine.

The objection to many of these imitation "ports," which otherwise might be sound wines of their kind, lies in the natural tendency to sweeten them artificially in order to impart to them a "sweetness" which the vulgar palate especially associates with port wine and which in the genuine wine represents the natural sugars of the grape. The added sweetening matter, as such, may be quite harmless, and chemical ingenuity perverted to the interests of commercial profit is doubtless equal to the production of compounds which on chemical analysis yield a constitution similar to that of Alto Douro wine. But just as it is found by medical experience that a "mineral water" produced in the laboratory does not fill the place of the natural product, so a wine, even when brought closely up to a given analytical standard of alcohol, sugars, ethers, and other secondary products, will not reproduce certain almost indefinable characteristics of the incompletely fermented must of the Alto Douro grape which has matured in intimate communion with the grape brandy with which the fermentation was arrested. The precise limits of the use of these imitation ports in commerce are difficult to trace; some of them, and notably "Tarragona," are retailed fairly under a proper description, but we suspect that the greater part of them are consumed by the casual customer of the restaurant or public-house who asks for "a glass of port." To those who have seen the vineyards of the Alto Douro it is obvious that, because of the large capital sunk in the terraced vineyards, genuine port can never be a "cheap" wine, in the sense of the cheap, and sound, claret which can be purchased by the public. In the course of our inquiry we have found a "tawny" port of undoubted authenticity which is retailed at the price of 37*s.* per dozen. But this is an exceptionally cheap wine of its class. And we doubt whether the retailing wine-merchant would usually sell a genuine Alto Douro wine of this description at much less than 42*s.* per dozen. The initial cost of production of "vintage" ports is precisely the same as the cost of the production of the other kind of wine, but to this must be added the compound interest accruing to the original capital cost during the time when the wine has been maturing. A fine vintage port is, in short, an article of luxury which the consumer cannot with reason expect to obtain cheaply. With port, as with other wines, the purchaser, in the absence of special knowledge, has to depend mainly on the integrity of the retailer. The methods of the long-established wine-shipping houses of Oporto are above suspicion, and the consumer who deals with an honest retailing wine-merchant will have no difficulty in obtaining a sound port at, considering the value of the article, a moderate price.

PORT WINE FROM AN ANALYTICAL POINT OF VIEW.

When the various stages concerned in the production of port wine described in the previous paragraphs are carefully considered we may broadly anticipate the analytical features of that wine which are calculated to distinguish it from wines produced in a different way. When, for instance, it is remembered that the must or grape juice is never allowed to exhaust itself of its sugar in the course of fermentation it is obvious that the resulting wine will be more or less sweet according to the length to which fermentation is allowed to go. When, again, it is remembered that the fermentation is stopped by adding brandy it follows that the alcoholic strength will be relatively high. Port, unlike other wines, presents, in short, much of the original grape juice

uncharged. It may, indeed, be said to consist of grape juice, wine, and brandy. This definition at once explains why it is that port serves as an excellent restorative and stimulant for those convalescing from disease. As the tables which follow indicate, the port shipped to this country shows on the whole a fairly constant composition. Certain variations are, of course, shown between young and old wines and between the vintage and the tawny port. As the wine is kept there is a falling off in the amount of colouring matter, tannin, tartaric acid, and nitrogenous matters in solution which, in fact, compose the "crust" which separates. The tawny wines lose considerable colour and become, relatively speaking, thin-bodied. With the loss in colour there is loss of tannin also and they are less astringent than vintage wines and possibly the wood in which they are stored absorbs some secondary alcoholic constituents, but, as might be expected, aldehydes tend to increase and in some cases a corresponding increase in ethers may be noticed. White ports contain relatively small amounts of tannin and nitrogenous matter. Generally speaking, port compared with other wines shows apart from alcohol a composition more nearly allied to that of grape juice than to that of a finished wine such as sherry, claret, burgundy, or hock.

In the following tables will be found the analyses of the grape juice before fermentation, of the must after it has been fermented, and of port prior to the process being checked by the addition of alcohol and of various ports. A separate table (Series VIII.) gives the composition of imitation ports—that is to say, of wines not produced in the Douro but yet which are called "port," the name being qualified by the addition of the name of the country (Cape, Canary, Cyprus, Spain) in which it was produced.

Series I.—In this table the results are of interest, inasmuch as they show in the first place the composition of the grape juice and in the second the changes which occur in that juice by partial fermentation. Starting with a proportion of sugar of from 22 to 25 per cent. (Nos. 1 and 2) we find that when the fermentation is stopped the sugar is reduced to about half the original amount present—i.e., from 9 to 12 per cent. (No. 3), while alcohol appears in the liquid to the extent of 5·25 per cent. by weight (mosto completely worked 1906). Roughly speaking, ten parts of sugar have disappeared and 5·25 parts of alcohol have appeared which agrees pretty closely with the requirements of theory in the following equation showing approximately the amount of alcohol produced on the fermentation of a given quantity of sugar:—

$$C_6H_{12}O_6 = 2C_2H_5OH + 2CO_2$$

Grape sugar (180 parts). Alcohol (92 parts).

The alcoholic strength of the must and the fact that only half of the sugar disappears on fermentation together show that port before the addition of brandy consists practically of half wine and half grape juice. It is interesting to notice the effect of the progress of fermentation or rather the development of alcohol on the composition of the juice apart from the reduction in sugar. The tannins are considerably reduced as also are the nitrogenous matters, they probably settle with the lees. The fixed acids remain about the same as does also the total mineral matter. Glycerine and ethers appear as the wine develops. It should be stated that the samples were freed from suspended matter and deposit by filtration before submitting them to analysis.

Series II., III., IV., V., and VI.—It is next interesting to compare the analyses of finished ports as set forth in the above series with the analyses of must, &c., given in Series I. The different series represent the produce of different shippers, but, as has already been stated, the ports shipped to this country show a fairly constant composition. It should be pointed out that in some cases the analysis was made of wines quite fresh from the vintage. The constituents of grape juice or of the partially fermented juice which show a reduction when that juice becomes port are (in addition, of course, to sugar) tannin (nearly a half), nitrogen calculated as protein (nearly a half again), tartaric acid (a small depreciation only), and mineral matter (in many instances a 50 per cent. reduction). This reduction may be accounted for by the fact that these constituents are rendered insoluble as the alcohol increases. New constituents apart from alcohol appear in tangible quantities in the shape of acid, glycerine, aldehydes, ethers, and alcohols of the higher series. A proportion of these is derived from the fermentation of the grape juice, whilst the rest is doubtless contributed by the brandy added, the quantities depending upon the kind of spirit used. It is the invariable custom of the shippers, we believe, to use only wine spirit for the purpose. This question has already been referred to and is dealt with also again under the paragraph headed Series IX., which relates to the analyses of the brandy used in port. It is hardly surprising to find that port in these circumstances shows, on the whole, a larger proportion of secondary products than do those wines which are not preserved at all with brandy or with only a very small quantity, as is the case with champagne. Port contains, for instance, considerably more aldehydes than does claret, while the higher alcohols are generally much higher. The sweet sauternes and Tokay contain, however, relatively speaking, a very large amount of alcohols of the higher series. The ethers in port occur in the same quantity as in claret, but they are less in port in proportion to the amount of alcohol present, while they are decidedly below the amount commonly found in sherry. The alcoholic strength of port is high for reasons already given, and since it is a partially fermented wine the sugar is relatively high also. The glycerine in port is low and is not more than half that found in claret owing again to the fermentation being checked. The quantity of tannin found in port wine is much the same as that found in claret, the juice containing a comparatively large quantity of tannin derived from the stalks. It is evident, however, that this quantity of tannin in the juice is by no means represented in the wine, as has been very generally stated, and it is no doubt thrown out with the protein constituents on the addition of spirit. As will be seen later, white port, Series VII., contains comparatively little tannin. Red wines are, generally speaking, richer in tannin than are the white, but there is no foundation for the statement that port contains more astringent substances than other red wines. The nitrogenous substances in port wine are low and generally less than the quantity contained in claret; the juice, however, contains an appreciable amount. The proteins, in fact, are probably thrown out by the alcohol, and this fact illustrates the fallacy of so-called port, meat, and malt wines. The acidity of port wine due to tartaric acid is relatively low, although there is a good deal of acid tartrate in the grape juice, but here again alcohol must be regarded as the eliminant. The volatile acidity regarded as acetic acid is also relatively low in port, owing no doubt to the preservative action of its alcoholic strength. For the same reason the mineral matter in port is distinctly less than that contained in other red wines.

Series VII.—The wines included in this series are white ports. The method of their production has already been explained. Their alcoholic strength is much the same as that of red port, so also is the amount of sugar. The tannin is usually lower and for this reason probably the average amount of nitrogenous matters is somewhat higher, the tannin tending to throw nitrogenous matters out of solution. In red wines nitrogen appears to enter into the constitution of the colouring matter. The amount of glycerine found in white port is distinctly higher than that found in red wine. The mineral matter is much the same, while there is little difference between the amounts of the fixed and volatile acidity of white and of red port. In regard to secondary products the total quantity in white port exceeds that generally found in red port, which appears to be due to a larger proportion of higher alcohols in white port than in red. This fact may have its origin in the particular kind of brandy used for its preservation. The ethers also often show a higher proportion probably for the same reason. The aldehydes again in white port are generally speaking higher than the amount present in red wine. Altogether, therefore, there is a greater development of secondary products in white than in red port wine. It is not a little interesting to observe that the sweet white wines of the Sauterne district and Tokay show a similar contrast when compared with the red wines of the Medoc. These results are somewhat curious, inasmuch as white wines are commonly regarded to be lighter than red wines. It is probable that they seem to be because they contain less astringent substances which may retard the digestive process.

Series VIII.—In this series are included the analyses of wines which may be regarded as imitation ports. They, at any rate, are not produced in the Douro but elsewhere. There is nothing to be said against them so long as they are correctly described, so long as the country of their origin is given, and so long as they are not offered as genuine Douro wine. As will be seen, in some cases these imitation ports

SERIES I.—ANALYSES OF MUSTS (*the Results expressing Grammes per 100 Cubic Centimetres of Must*).

No.	Description.	Alcohol by weight.	Alcohol by volume.	Ethers.	Extractives.	Glycerine.	Sugar.	Tannin.	Protein = N × 6·3.	Total volatile acidity calculated as acetic acid.	Total fixed acidity calculated as tartaric acid.	Total mineral matter.	Insoluble matters.	Mineral matter in insoluble matters per cent.	Protein = N × 6·3 in insoluble matters per cent.
1	White Grape, sterilised ...	1·06	1·34	*Nil.*	24·21	*Nil.*	22·49	0·400	0·380	*Nil.*	0·350	0·285	1·010	12·15	3·54
2	Black Grape	1·69	2·12	,,	27·22	,,	25·72	0·420	0·310	,,	0·400	0·370	0·290	27·54	0·70
3	Mosto, completely worked, 1906	5·25	6·55	Traces.	14·07	Traces.	12·70	0·226	0·150	,,	0·600	0·370	0·600	10·73	4·82

SERIES II.—ANALYSES OF PORTS (*the Results expressing, except where otherwise stated, Grammes per 100 Cubic Centimetres of Wine*).

Description.	Alcohol by weight.	Alcohol by volume.	Ethers.	Extractives.	Glycerine.	Sugar.	Tannin.	Protein = N × 6·3	Total volatile acidity calculated as acetic acid.	Total fixed acidity calculated as tartaric acid.	Total mineral matter.	Secondary products (per 100,000 parts of absolute alcohol present).				
												Aldehydes calculated as ethyl aldehyde.	Furfural.	Ethers calculated as ethyl acetate.	Higher alcohols.	Total secondary products.
Vintage Port, 1890 ...	18·85	23·10	0·042	8·98	0·150	8·00	0·158	0·097	0·060	0·375	0·120	6·00	0·58	182·00	348·00	536·58
,, ,, 1892 ...	19·67	24·08	0·028	8·17	0·342	7·00	0·210	0·088	0·024	0·360	0·070	5·40	0·55	117·00	333·00	455·95
,, ,, 1894 ...	19·67	24·08	0·027	8·85	0·408	7·57	0·189	0·251	0·096	0·315	0·120	4·30	0·55	112·00	200·00	316·85
Port ... ... 1904 ...	18·85	23·10	0·022	8·62	0·086	7·78	0·229	0·088	0·024	0·367	0·070	11·00	Trace.	96·00	*Nil.*	107·00
Old, bottled from wood, ten years in bottle ...	18·85	23·10	0·058	10·19	0·220	9·19	0·182	0·088	0·090	0·345	0·170	11·00	0·60	252·00	210·00	473·60
Lowest	18·85	23·10	0·022	8·17	0·086	7·00	0·158	0·088	0·024	0·315	0·070	4·30	0·55	96·00	200·00	107·00
Highest	19·67	24·08	0·058	10·19	0·408	9·19	0·229	0·251	0·096	0·375	0·170	11·00	0·60	252·00	348·00	536·58
Mean	19·26	23·59	0·040	9·18	0·247	8·09	0·193	0·169	0·060	0·345	0·120	7·65	0·57	174·00	27·400	321·79

SERIES III.—ANALYSES OF PORTS (*the Results expressing, except where otherwise stated, Grammes per 100 Cubic Centimetres of Wine*).

Description.	Alcohol by weight.	Alcohol by volume.	Ethers.	Extractives.	Glycerine.	Sugar.	Tannin.	Protein = N × 6·3.	Total volatile acidity calculated as acetic acid.	Total fixed acidity calculated as tartaric acid.	Total mineral matter.	Secondary products (per 100,000 parts of absolute alcohol present).				
												Aldehydes calculated as ethyl aldehyde.	Furfural.	Ethers calculated as ethyl acetate.	Higher alcohols.	Total secondary products.
1892...	18·08	22·18	0·038	9·87	0·520	8·49	0·203	0·035	0·048	0·375	0·250	12·00	0·60	173·00	363·00	548·60
1901...	18·08	22·18	0·044	13·37	0·320	12·24	0·238	0·017	0·048	0·375	0·180	20·00	Trace.	200·00	654·00	874·00
1902...	18·85	23·10	0·049	16·54	0·332	15·35	0·233	0·022	0·084	0·397	0·210	15·00	,,	213·00	700·00	928·00
1903...	18·85	23·10	0·051	13·67	0·440	12·40	0·270	0·022	0·060	0·352	0·170	11·70	,,	221·00	350·00	582·70
1904...	19·67	24·08	0·060	13·22	0·440	11·70	0·275	0·163	0·050	0·420	0·220	8·00	0·50	250·00	233·00	591·50
1905...	18·85	23·10	0·040	10·22	0·172	9·14	0·300	0·132	0·090	0·315	0·170	11·00	0·30	174·00	280·00	465·30
1906...	13·15	16·24	0·063	16·12	0·556	14·58	0·260	0·198	0·036	0·397	0·230	12·00	Trace.	393·00	500·00	905·00
Lowest	13·15	16·24	0·038	9·87	0·172	8·49	0·203	0·022	0·036	0·315	0·170	8·00	0·30	173·00	280·00	465·30
Highest	19·67	24·08	0·063	16·54	0·556	15·35	0·300	0·198	0·090	0·420	0·250	20·00	0·60	393·00	700·00	928·00
Mean	16·41	20·16	0·050	13·20	0·364	11·92	0·251	0·110	0·063	0·367	0·210	14·00	0·45	283·00	490·00	696·65

SERIES IV.—ANALYSES OF PORTS (*the Results expressing, except where otherwise stated, Grammes per 100 Cubic Centimetres of Wine*).

Description.	Alcohol by weight.	Alcohol by volume.	Ethers.	Extractives	Glycerine.	Sugar.	Tannin.	Protein = N × 6·3.	Total volatile acidity calculated as acetic acid.	Total fixed acidity calculated as tartaric acid.	Total mineral matter.	Secondary products (per 100,000 parts of absolute alcohol present). Aldehyde calculated as ethyl aldehyde.	Furfural.	Ethers calculated as ethyl acetate.	Higher alcohols.	Total secondary products.
1895	21·31	26·04	0·088	11·82	0 458	9 90	0·245	0·350	0·102	0 532	0·250	40·00	4·00	340·00	307·00	691 00
1896	18·85	23·10	0 079	13·22	0·496	11 60	0·140	0·132	0 012	0·600	0·220	46·00	1·10	304·00	280 00	631·10
1897	20·50	25·07	0 029	11·98	0·156	10·50	0·221	0·286	0·018	0·525	0 250	21·00	1·60	140·00	256 00	418·60
1898	20·50	25·07	0 060	10·15	0 212	8 35	0·217	0·441	0 096	0 480	0 250	21 00	1·50	240·00	192·00	454·50
1899	18·85	23·10	0·044	9 83	0·438	8·04	0·260	0·396	0 096	0·480	0·240	23 00	1·30	191 00	140·00	356·30
1900	18·08	22·18	0·051	11 75	0·260	10·70	0·197	0·080	0·100	0·380	0·120	20·00	0·60	231·00	145·00	396·60
1901	19·67	24·08	0·058	10·06	0·458	8·63	0·196	0·176	0 042	0 410	0·190	10 80	0 50	241·00	133 00	385·30
1902	18·85	23·10	0·066	10 00	0·340	8 50	0·231	0·185	0·066	0 525	0·190	11·30	0·32	287 00	140·00	438·62
1903	18·08	22·18	0·028	11 57	0·150	10·10	0·313	0 176	0·130	0·430	0 220	6·00	0·24	130 00	73·00	209·24
1904	19 67	24·08	0·028	10 84	0·190	9·61	0·238	0·132	0 024	0 500	0·170	5 40	Trace.	117·00	*Nil.*	122·40
1905	18·08	22·18	0·022	11·62	0·096	10 60	0·196	0·110	0 012	0 375	0 220	6·00	,,	100·00	73 00	179·00
Lowest	18·08	22·18	0·022	9·83	0 096	8·04	0·140	0·080	0 012	0 375	0·120	5·40	0.24	100·00	73 00	122·40
Highest	21·31	26·04	0·088	13·22	0·496	11·60	0·313	0 441	0·102	0 532	0·250	46·00	4·00	340·00	307·00	691·00
Mean	19·69	24·11	0·055	11·52	0·296	9·82	0·226	0·260	0 057	0·453	0·185	25 70	2·12	220·00	190·00	406·70

SERIES V.—ANALYSES OF PORTS (*the Results expressing, except where otherwise stated, Grammes per 100 Cubic Centimetres of Wine*).

Description.	Alcohol by weight.	Alcohol by volume.	Ethers.	Extractives.	Glycerine.	Sugar.	Tannin.	Protein = N × 6·3.	Total volatile acidity calculated as acetic acid.	Total fixed acidity calculated as tartaric acid.	Total mineral matter.	Secondary products (per 100,000 parts of absolute alcohol present). Aldehydes calculated as ethyl aldehyde.	Furfural.	Ethers calculated as ethyl acetate.	Higher alcohols.	Total secondary products.
1905	18·85	23·10	0·031	10·90	0·144	9·70	0·375	0·154	0·006	0·510	0·060	5·50	0· 23	135·00	*Nil.*	140·73
1904	21·31	26·04	0·038	10 87	0·084	10·00	0·214	0·088	0·018	0·375	0·070	10·00	Trace.	146·00	61·50	217·50
1903	20·50	25·07	0·024	10·07	0 372	8·59	0·298	0·220	0·042	0·470	0·120	9·00	,,	96·00	64·00	169·00
1902	18 85	23·10	0 022	10 85	0 398	9·50	0 221	0 088	0·054	0·354	0·050	8·50	,,	96·00	70·00	174·50
Port 10 to 12 years' old	21·31	26·04	0·054	9·11	0·368	7 69	0·193	0·163	0·060	0·525	0·170	40·80	0·60	208·00	123·00	372·40
Lowest	18·85	23·10	0·024	9·11	0·084	7·69	0·193	0 088	0·006	0·354	0 050	8·50	0 23	96·00	61·50	140·73
Highest	21 31	26 04	0·054	10·00	0·398	10·00	0·375	0 220	0·060	0·525	0·170	40·80	0·60	208 00	123 00	372·40
Mean	20 08	24·57	0·038	10·00	0·241	8·84	0·284	0·154	0·033	0·439	0·110	24·60	0·40	152 00	92·25	256·56

SERIES VI.—ANALYSES OF PORTS (*the Results expressing, except where otherwise stated, Grammes per 100 Cubic Centimetres of Wine*).

Description.	Alcohol by weight.	Alcohol by volume.	Ethers.	Extractives.	Glycerine.	Sugar.	Tannin.	Protein = N × 6·3.	Total volatile acidity calculated as acetic acid.	Total fixed acidity calculated as tartaric acid.	Total mineral matter.	Secondary products (per 100,000 parts of absolute alcohol present.) Aldehydes calculated as ethyl aldehyde.	Furfural.	Ethers calculated as ethyl acetate.	Higher alcohols.	Total secondary products.
1905	18·08	22·18	0·050	10 75	0·420	9 20	0·338	0·158	0 024	0·405	0·200	7·60	Trace.	227·00	220·00	454·60
1904	18·85	23 10	0 056	9 57	0·240	8 40	0·305	0·100	0 030	0·375	0·120	8·40	,,	243 50	74 00	325·90
1903	19·67	24 08	0 031	9·57	0 260	8·50	0·198	0 154	0 078	0·410	0·180	14·60	,,	129 00	67 00	210 60
1902	18 85	23·10	0·045	10·55	0 604	9·00	0·182	0·149	0 060	0·337	0 200	6·00	,,	196 00	140·00	342·00
Port 10 years in wood	19·67	24·08	0·035	10·09	0·180	9 10	0·170	0·114	0·120	0·310	0·220	22 08	,,	146·00	134·33	301·41
Typical port from wood	18·08	22·18	0·049	8 45	0·390	7·20	0·120	0·145	0 084	0·337	0·200	13·40	,,	223·00	150·00	386·40
Lowest	18·08	22·18	0 031	8·45	0·180	7·20	0·120	0 100	0·024	0·310	0·120	6 00	—	146 00	67 00	210·60
Highest	19·67	24·08	0·056	10·75	0·604	9 20	0·338	0·158	0·120	0·410	0·220	22 08	—	243·50	220·00	454·60
Mean	18·87	23·13	0·043	9·60	0·392	8·20	0 279	0·129	0 072	0·360	0·170	14·08	—	194·75	143·50	332·60

SERIES VII.—ANALYSES OF WHITE PORTS (*the Results expressing, except where otherwise stated, Grammes per 100 Cubic Centimetres of Wine*).

Description.	Alcohol by weight.	Alcohol by volume.	Ethers.	Extractives.	Glycerine.	Sugar.	Tannin.	Protein = N × 6·3.	Total volatile acidity calculated as acetic acid.	Total fixed acidity calculated as tartaric acid.	Total mineral matter.	Secondary products (per 100,000 parts of absolute alcohol present). Aldehydes calculated as ethyl aldehyde.	Furfural.	Ethers calculated as ethyl acetate.	Higher alcohols.	Total secondary products.
1906	19·67	24·08	0·026	·72	0·132	9 00	0·095	0·088	0·012	0·345	0·050	10·80	Trace.	108·00	*Nil.*	118·80
White port 15 years in wood	18·08	22·18	0·052	9·77	0 298	8 70	0·067	0·066	0·078	0·375	0·220	48·00	0·90	237 00	218·00	503·90
Young white port ...	18 85	23·10	0·045	10·37	0·336	9·10	0·194	0·110	0·060	0·352	0 200	23 00	0·60	200 00	278·00	501·60
Old white port 15 years in wood	14·82	18·25	0 070	13 28	0·920	11·49	0·115	0·154	0·060	0·410	0·200	Trace.	1·10	350·00	666·00	1017·10
1906	13·15	16·24	0·049	14·74	0 842	12·90	0·100	0·295	0 066	0·337	0·200	21·00	1·10	307·00	1000·00	1328·00
10 years in wood	17·25	21·19	0·079	11·05	0·560	9·70	0·098	0·141	0·012	0·300	0·170	17 00	0·60	376·00	381·00	774·60
White port 2 years in wood	15·67	19·28	0·084	9 20	0·410	7 99	0·130	0·242	0 048	0·290	0·140	—	—	—	—	—
Lowest	13·15	16·24	0·026	9 20	0·132	7·99	0·067	0 066	0·012	0·290	0·050	10·80	0·60	108 00	218·00	118 80
Highest	19·67	24·08	0·084	14·74	0·920	12·90	0·194	0·295	0·078	0 410	0·220	48·00	1·10	376·00	1000·00	1017·10
Mean	16·41	20·16	0·055	11·94	0·526	10·44	0·130	0·180	0 045	0·350	0·135	29·40	0 85	242 00	669·00	567·55

SERIES VIII.—ANALYSES OF IMITATION PORTS (*the Results expressing, except where otherwise stated, Grammes per 100 Cubic Centimetres of Wine*).

Description.	Alcohol by weight.	Alcohol by volume.	Ethers.	Extractives.	Glycerine.	Sugar.	Tannin.	Protein = N × 6·3.	Total volatile acidity calculated as acetic acid.	Total fixed acidity calculated as tartaric acid.	Total mineral matter.	Secondary products (per 100,000 parts of absolute alcohol present.) Aldehydes calculated as ethyl aldehyde.	Furfural.	Ethers calculated as ethyl acetate.	Higher alcohols.	Total secondary products.
Cyprus port	18·08	22·18	0·044	8·82	0·414	7·50	0·142	0·110	0 072	0·330	0 228	16·00	Trace.	200·00	1090·00	1306·00
Cape Colony port	17·25	21·19	0·088	22·95	1·280	20 70	0·205	0 080	0·036	0·412	0·230	50·00	5·00	420·00	762·00	1237·00
Canary port	15 67	19·28	0·059	4·52	0·420	3 20	0·113	0·110	0·096	0·375	0·250	28·00	Trace.	310 00	421·00	759·C0
Spanish port	16·46	20·24	0·059	12·15	0·218	11·05	0·131	0·158	0·102	0·330	0·270	26·00	1·30	295 00	240·00	562·30
Lisbon port	19·67	24·08	0·047	9·77	0·390	8·62	0·187	0·C80	0 060	0·375	0·120	10·80	0·55	196·0	Trace.	207 00
Jersey port	14·82	18·25	0·035	1·72	0·250	0·89	0·145	0·154	0·012	0·120	0·170	14·40	Trace.	194·00	Trace.	208·40
Lowest	14·82	18·25	0 035	1·72	0·250	0·89	0·113	0·080	0·012	0·120	0·120	10·80	0·55	194·00	240·00	207·00
Highest	19·67	24·08	0·088	22·95	1·280	20·70	0·205	0·158	0·102	0·412	0·270	50·00	5·00	420·00	1090 00	1306·00
Mean	17·24	21·16	0·061	12·33	0 765	10·79	0·109	0·119	0·057	0·266	0·195	30·40	2·77	307·00	665·00	756·50

SERIES IX.—ANALYSES OF BRANDIES USED FOR CHECKING FERMENTATION AND FOR "LOTTING."

Description.	Per cent. Alcohol by weight.	Alcohol by volume.	Extractives.	Per 100,000 parts of absolute alcohol. Acidity calculated as acetic acid.	Aldehydes calculated as ethyl aldehyde.	Furfural.	Ethers calculated as ethyl acetate.	Higher alcohols.	Total secondary products.
1. Old Douro brandy...	61·08	68 72	0·36	126 00	70·00	0·49	303 00	466 20	965·69
2. Young Southern brandy	67 54	74·70	0·05	39 00	13·C0	0·65	167·05	433 29	652·99
3. Brandy	55·86	63·69	0·05	54 00	18·75	0·38	92·40	180·00	345·53
4. Southern brandy	69 63	76 57	0·13	31·20	4·87	0·32	64·06	346·50	446·95
5. Brandy	69 63	76·57	0·12	54 60	6 50	0·45	205·92	433·29	700·76
6. Southern brandy	68 38	76·45	0 25	46 80	6·50	0 65	183·C4	169·00	405·99
Lowest	55 86	63 69	0·03	31·20	4·87	0 32	64·06	169 00	345·53
Highest	69·63	76 57	0·36	126 00	70·00	0·65	303·00	466·20	965·69
Mean	62 74	70·13	0·19	78·60	37·43	0·48	183·50	317·60	665·61

show much the same features in regard to composition as real port. They have not, however, that æsthetic quality which distinguishes the product of the Alto Douro. In certain cases there are sharp analytical differences. For example, Jersey port contains less than 1 per cent. of sugar and Canary port 3·2 per cent., against an average of 8 or 9 per cent. in genuine Douro wine. The amount of total extractives shows similar relations. The alcoholic strength is also decidedly lower in both as compared with genuine port. On the other hand, Cape Colony port contains no less than 20 per cent. of sugar, which is nearly three times that contained in genuine port. Spanish port contains 11 per cent. of sugar. Cape Colony port, again, or at least the sample which we examined, contained a large amount of glycerine—as much as 1·28 per cent., as against a normal of 0·30 per cent. in genuine port. This raises a strong presumption that glycerine is added to this wine. The wines in this series will be found as a rule to show a smaller proportion of tannin than appears in genuine port. Coming to secondary products in imitation ports the fact stands out generally that these occur in relatively excessive quantities. Cyprus port giving a total of 1306 and Cape Colony of 1237 parts per 100,000 parts of absolute alcohol present. Canary port comes next and then Spanish port. The ethers are also high, as are also the aldehydes, and the difference is probably that these wines are fortified with a powerful and more or less crude spirit. Furfural, it may be noted, is a decided feature in the analysis of Cape Colony port. As Spanish port or Tarragona port is often regarded as "the poor man's port," being a very cheap wine, and commanding a ready sale in this country, it may be interesting to point out that its analysis differs from genuine port in the following particulars. Its alcoholic strength is generally lower than that of genuine red port, the sugar is higher by a few points per cent., the glycerine is lower, as is also the tannin, and the nitrogen slightly higher; the total volatile acidity reckoned as acetic acid is distinctly higher and the amount of mineral matter exceeds even the highest figure given by genuine Douro wine; it is, in fact, often double the average found. Two of the imitation ports—namely, Canary and Jersey port—resembled a coarse burgundy more than anything else, and were practically "dry" and sour to the taste, the sugar amounting only to 3·20 per cent. and 0·89 per cent. respectively.

Series IX.—In this table are given the analyses of various brandies (2, 3, 4, 5, and 6) used for checking the fermentation and No. 1 old Douro brandy for "lotting" port wine. It may be noted that there is a fair uniformity in regard to the alcoholic strength which accords with that of a spirit rectified in the pot still. The average strength was 72 per cent. by volume of alcohol or 26° overproof. The Douro brandy shows the lowest strength and the southern brandy the highest. They are one and all characterised by containing the secondary products of fermentation and distillation—namely, volatile acids, aldehydes, furfural, ethers, and higher alcohols, in collective amounts which indicate that the use of patent still spirit is not the rule in the port wine industry. Analysis, in fact, distinctly implies the contrary to be the case—namely, that wine spirit obtained in pot stills is invariably employed. It is satisfactory to find that this is so, since of course the use of patent still spirit derived from grain or other starchy material connotes an addition of a substance foreign to, or opposed to the nature of, wine itself. The mean amount of ethers found in the brandies was 220 parts per 100,000 parts of alcohol present; higher alcohols, 997; furfural, 0·61; aldehydes, 37; and free acid, 82. The composition of these brandies resembles that of the crude pot still spirit obtained by the distillation of the wines in the southern countries. In the maturing of port wine the spirit undergoes with it the same mellowing influences of storage and keeping, so that ultimately those subtle constituents are developed which give to port its æsthetic qualities and which make it acceptable to the cultured palate, and render it wholesome for special dietetic and medicinal purposes.

PORT FROM A MEDICAL POINT OF VIEW.

The effect of wines on the human body is dependent to some extent on the alcohol which they contain, but, as we and others have frequently pointed out, the ethers and other secondary products have a marked physiological action also. Of the other constituents, the sugars, acids, tannin, and salts are the most important. The stimulating effects of a still wine are, as a rule, not so marked as those of a sparkling wine. Port, however, possesses certain properties of its own which distinguish it from other wines used for medicinal purposes. Like certain sherries and Madeira, port contains a larger percentage of alcohol than other wines, due, as has already been explained, to the brandy which has been added to it during the process of its development. On this account it has to be used with caution and is usually administered in small quantities. Consequently port cannot be placed in the category of light wines. Further, it is scarcely necessary to say that when the therapeutic effects of port are required it is essential that a good sound brand should be employed. It will be seen that the term "port" is sometimes used commercially to designate wines other than those produced at the Alto Douro. In our analytical report the differences in their composition from true port are indicated. For instance, the alcoholic strength is decidedly lower in some of the imitation ports. It is interesting to compare the analysis of Tarragona port with that of genuine port. The same therapeutic results cannot be expected from the former as from the latter.

Port is particularly indicated in cases of pure debility or in recovery from acute diseases. During the time of fever, spirit, such as brandy, is to be preferred. In the later stages of typhoid fever if the first sound of the heart tends to become feeble port is frequently of value, whilst in pneumonia and in bronchitis occurring in elderly subjects it may also be prescribed with advantage. Most authorities are of opinion that in pulmonary tuberculosis alcohol is not indicated as long as untoward symptoms are not observed. If, however, debility is marked or if night sweats are profuse port is of value in the attempt to increase the patient's general strength. In the debility of advanced age, too, port may be of service. In most of the above conditions, as we have before suggested, the ethers and some of the other constituents aid in producing the desired effect in addition to the purely stimulating action of the alcohol.

Although, as has been shown, port may be of value in certain cases, yet there are certain drawbacks to its use. Sherry, port, and Madeira have all been accused of inducing gout and cirrhosis of the liver and of being harmful to plethoric individuals. Port—but especially the immature wine of districts outside the Douro—may cause constipation, perhaps owing to the tannin which it contains. This may sometimes be a partial explanation of its bad effects on gouty patients. Anything which tends to retard the proper elimination of waste materials may, in predisposed individuals, increase the accumulation of urates and so favour the gouty diathesis. Therefore if a patient exhibits any indications of this diathesis he should avoid this wine, or at any rate should take only old and fully matured wine such as is always shipped from the Alto Douro.

Before advising port as a medicinal agent it behoves the practitioner to make careful inquiries as to the family and personal history of the patient, lest in advising a stimulant which may be decidedly beneficial in some instances he may suggest treatment which may have prejudicial effects in other conditions.

DEATH UNDER AN ANÆSTHETIC.

DR. F. J. WALDO, the coroner for the Borough of Southwark, held an inquiry on, Dec. 7th at the Union Relief Station, Borough-road Southwark, into the circumstances attending the death of John Ching, which occurred at Guy's Hospital on Dec 3rd.

MRS. ANN CHING of 17, Lyvedon-road, Blackheath, identified the body as that of her husband and spoke to his having been admitted into Guy's Hospital on Oct. 15th last to undergo an operation. She stated that the deceased had expressed himself as very thankful to the nurses and doctors at the hospital. "Everyone had been kind and good to him."

DR. JOHN SEPHTON COOPER said that he was a registered medical practitioner and held the office of house surgeon at Guy's. The deceased man was in the hospital for malignant ulceration of the tongue. He was admitted on Oct. 15th and was first seen by him about Nov. 23rd. Mr. C. H Golding-Bird, senior surgeon at Guy's, removed the half of the deceased's tongue on Oct. 17th. This was done under a general anæsthetic; he believed is was chloroform that was used. The anæsthetic was administered by one of the special visiting anæsthetists, of whom there were eight at Guy's. The operation lasted one and a half hours and the deceased got over the effects quite well. A second operation

was performed on Nov. 18th to remove the glands of the neck and Mr. Golding Bird was again the operator. As an anæsthetic the A.C.E. mixture was given, this being composed of one part alcohol, two parts chloroform, and three parts ether. Chloroform was also given after that. The anæsthetic was given by one of the special visiting anæsthetists. The man got on all right after that and subsequently came under his care on Nov. 23rd. The wound was not healing up properly. At the first operation the jaw had been divided in the middle line so as to get inside the mouth, and the jaw was sutured by wire. It was now necessary to remove the wire. The man had given his consent to the operation and he was prepared for it by being kept without food for four or five hours. This preparation was necessary, otherwise the patient was apt to vomit and this might be a danger under an anæsthetic. This last operation was done on Dec. 3rd and Mr. H. J. Smith was the anæsthetist. Mr. Smith was not one of the special visiting anæsthetists but was a clinical assistant at Guy's Hospital and a properly qualified man. He asked Mr. Smith to give the anæsthetic because he thought that he was competent to give it. The operation was to take place in the morning in the operating theatre and he (witness) was present to do it. Various assistants were also in attendance; also Mr. P. Turner, resident surgical officer, to supervise the operation.

At this point the CORONER asked the witness who was responsible for giving the anæsthetic and whether according to law the operator was not the responsible party.

The WITNESS replied that he thought the anæsthetist took the full responsibility for giving the anæsthetic. He (witness) did not take any responsibility as regarded the administration of the anæsthetic in this particular case. He asked Mr. Smith to put the patient lightly under. To begin with, an A.C.E. mixture was given on a sponge in a cone. The patient was lying on his back with the head raised, in the dorsal position, and he seemed to be taking the anæsthetic very nicely. There was no struggling. Sometimes heavy drinkers or smokers took an anæsthetic very badly, but so far as he knew the patient had not been a heavy drinker or smoker. The first untoward symptom that the patient had was a fit of coughing and he also held his breath. This occurred about five minutes after he had begun to take the A.C.E. mixture and he had also had two or three breaths of chloroform. The A.C.E. mixture had been given about four minutes and the unfavourable symptoms appeared after pure chloroform had been administered in a Junker's inhaler. Whenever this inhaler was used there could not be more than 4 per cent. of chloroform in the air. There was no stridor or noise in the throat, nor was there any vomiting. When the patient coughed he went a little blue in the face. He did not turn pale. After his coughing the respirations stopped somewhat suddenly. The anæsthetist then immediately pulled the patient's tongue forward and he (witness) applied artificial respiration, keeping it up for three-quarters of an hour, but they could not recover the patient. They then put hot cloths at his heart and injected strychnine and ether, and also raised the patient's feet so as to get the blood down to his heart. The witness was present at the post-mortem examination.

The CORONER, before calling upon the next witness, said that he had got an outside medical man, an expert pathologist, to give evidence in this case and they would hear his evidence later. He thought it was in the interests of the hospital and the surgeon and the anæsthetist that he should take that step.

Replying to a question from the jury, Dr. COOPER said that the patient collapsed from heart failure.

Mr. HENRY JOSTE SMITH said that he was a registered medical practitioner and had been qualified since June last, though of course his name was not on this year's printed Register. He was a clinical assistant at Guy's Hospital. That was an appointment which for three months preceded that of assistant house surgeon and after assistant house surgeon came the post of full house surgeon. The clinical assistants were all supposed to administer anæsthetics when called upon, not only in emergency cases but at any time. There were eight special visiting anæsthetists.

The CORONER: Have you got any resident anæsthetists who would be in the hospital night and day?

The WITNESS replied that there was no man in the hospital who did nothing but give anæsthetics night or day. In the majority of cases where anæsthetics were necessary they were given by gentlemen holding a resident post in the hospital. The eight special visiting anæsthetists as a rule administered the anæsthetics to the worst cases. In a case of, say, a strangulated hernia brought in during the night and in which an operation was necessary the house physician or the clinical assistant would give the anæsthetic. In such a case one of the special visiting anæsthetists would not be sent for. Before a person was qualified as an anæsthetist it was necessary for him to attend ten lectures on anæsthetisation and also that he should give anæsthetics on at least 20 occasions under the supervision of one of the special visiting anæsthetists. He had administered anæsthetics on 40 different occasions. In his examinations for qualification he did not get any questions in regard to the administration of anæsthetics, though he was liable to get such questions. In the case of the deceased A.C.E. was given because it was a proper mixture to give to an elderly man, a man aged 68 years. He looked older than his actual age. It was also necessary to give chloroform through the Junker's inhaler. The anæsthetic was given not by artificial light but by daylight. It was administered in order that the wire, which was causing necrosis, might be removed from the patient's jaw. This was the only patient who was placed under an anæsthetic by him that day. The A.C.E. mixture was administered more slowly than usual and this was done by pouring it on a sponge contained in the inhaler and allowing the patient to inhale it in that way. In the A.C.E. mixture ethylic ether and acetone chloroform were used. This was the cheaper kind of chloroform (1*s.* 4½*d.* per pint). Ethylic chloroform came to 5*s.* 6*d.* to 6*s.* per pint. He was quite satisfied that there was no difference between the two kinds of chloroform. He had used the Junker's inhaler many times and in the present case he only gave rather less than the 4 per cent. of chloroform, which it was only possible to give through that particular inhaler. The patient did not get completely under but only to the second stage of anæsthetisation. The patient had egg and milk at 6 A.M. and the operation took place at 12. That was sufficient time to elapse in order to avoid any possible vomiting and consequent stopping of the respiration. As far as could be made out the patient's lungs and heart were quite normal. He was satisfied that the patient was in a safe condition to be placed under an anæsthetic. On two occasions previously the patient had been placed under an anæsthetic but not by the witness. Mr. G. Rowell, who is a lecturer on anæsthetics put the patient under on the second occasion. It happened to be Mr. Rowell's day. One of the special visiting anæsthetists usually came at 2 o'clock each day. Certain of them gave the anæsthetic in the operating theatre and others administered it for small operations in the out-patients' department. As far as witness could make out the patient had been a sober man and he was very quiet during the operation. He watched the respiration and pulse during the operation. The respiration throughout, excepting just before the patient died, was perfectly regular and deep, just as would be expected. There was no embarrassment nor was there any snoring. The pupils were medium in size. The first symptom of impending death that he noticed was a fit of coughing. The patient was lying in the dorsal position with a small pillow under his head. They changed from the A.C.E. mixture to chloroform in order that the surgeon might begin his operation, because the patient was sufficiently anæsthetised for the purpose. The surgeon could not commence the operation whilst the A.C.E. mixture was being given because the mask was over the patient's mouth. Witness gave the chloroform through the small tube of Junker's inhaler. The patient began to cough and witness ceased to give him any more of the anæsthetic after he had had four breaths. Then he coughed out loudly and the respiration stopped. The pulse was all right until after the coughing and then it went suddenly. There were two breaths subsequent to the stopping of the pulse. The pulse at the wrist stopped before the respiration stopped. There was no vomiting at all at any time. They started artificial respiration by Silvester's method. For this purpose they tilted the table up, so that the patient's head was lower than his feet. When they started artificial respiration they gave him an injection of strychnine. Witness put the clamp forceps on the tongue and rhythmically drew the tongue in and out while the surgeon did artificial respiration. He felt and heard the respiration. They kept that on for 40 minutes but the patient did not come to. He also had an injection of ether, hot flannels were placed over the heart, and an injection of adrenalin was given. Witness had heard of subdiaphragmatic massage of the heart being done in certain cases but in this particular case they would have had to open the abdomen. He had his tracheotomy knife and tube ready but tracheotomy was not required in this case. Had tracheotomy been necessary the knife and forceps would have been quite sufficient for that purpose. There was an extra hot blanket thrown over the patient. Besides the strychnine and adrenalin brandy was given. The patient died under the influence of the chloroform before the operation had been commenced. His sudden death was due, witness thought, to dilatation of the right side of the heart which was determined and brought about by the strain of the coughing. He was present at the post-mortem examination. He did not think the coughing would have killed the patient had he been walking about. But the patient had had about four breaths of chloroform and was, in witness's opinion, more under the influence of the A.C.E. than of the chloroform. Death was not due to an overdose of chloroform, but the man died whilst under the influence of the anæsthetic. Witness had given anæsthetics in about 100 cases altogether, including the 40 cases with a specialist. He took the responsibility entirely upon himself for the administration of the anæsthetic. In 60 cases altogether he had been responsible and in the other 40 cases the senior anæsthetist who was with him would have been held responsible. These 60 cases were all long anæsthetic cases. During the last three weeks he had given chloroform to two cases of operation on the jaw, each operation lasting about one and a half hours. He had never had any previous fatal case. The operation in the present case was trivial and would only have required about two minutes. While he would give chloroform in a case of cancer of the tongue he would not give it in a case of exophthalmic goitre, as in this latter disease there was a certain risk in administering chloroform.

Dr. THEODORE FISHER said that he was a registered medical practitioner. He had had considerable experience as an expert pathologist. He had made over 2000 post-mortem examinations. He made an examination of the body of the deceased on Dec. 5th. Dr. Cooper and Mr. Smith were present at the post-mortem examination. The external examination showed that the deceased was an averagely well-nourished man. There was the scar of an operation through the lower lip and under the jaw. With regard to the internal examination he found the heart about normal. The tricuspid orifice was a little larger than was generally allowed to be the normal, but there was no evidence of any regurgitation nor were there any marks pointing to valvular disease. There was one small patch of disease in the heart wall. He could not say that there was any evidence of dilatation at the time of death. But he supposed it was within the bounds of possibility that dilatation might have occurred and that the artificial respiration had emptied the right side of the heart. The aorta and other vessels were, on the whole, healthy but there were small patches of atheroma such as would be present in a man of his age and accounted for by senile changes. The left coronary artery had a few patches of atheroma but nothing very exceptional. About half of the tongue had been removed. There was some thick muco-pus in the bronchi and trachea but no foreign body. The pleuræ were both firmly adherent. That pointed to old pleurisy. There was no disease of the lungs. The left kidney was almost destroyed by hydronephrosis. The other kidney was also diseased. It had soft cysts and so far as one could tell with the naked eye there was also considerable destruction of the structure of the kidney. The cause of death which had been mentioned by Mr. Smith had not occurred to him. The muco-pus in the trachea and the bronchial tube must have interfered with the aeration of the blood, and he should have thought it increased the susceptibility of the heart to the influence of the chloroform, and in that way led to cardiac failure. From the post-mortem evidence there was no definite cause of death. Apart from some external cause there was nothing in the organs of the body themselves that could be definitely stated to have caused the man's death, though had one not known anything of the history one might have attributed death to uræmia because of the condition of the kidneys.

Dr. COOPER (recalled) said there was no albumin in the urine.

The CORONER: Do you suggest that there was an overdose of anæsthetic?

Dr. FISHER: That is a thing which from a pathological standpoint

one, of course, could not suggest where there was no evidence of it. Further questioned by the coroner, witness said he thought that the man died from cardiac failure and also respiratory failure whilst under the influence of an anæsthetic administration. He would say that the chloroform was the main cause of death. At the same time the suggestion which had been made did not seem to him to be an altogether unreasonable one. The heart was very susceptible sometimes to strong respiratory efforts. He had known more than one case of a man with very severe coughing having fallen down dead suddenly in the street with a fit. The shock to the heart would not be sufficient to cause dilatation but it might cause temporary distension. There would not, however, be any appearance of that after death. He considered that the operation was necessary. In days gone by he had had experience of the administration of anæsthetics and, so far as he remembered, A.C.E. followed by chloroform was virtually the only anæsthetic that should be given in operations about the mouth. Asked by the coroner as to whether it was not usual after a certain age, 60 or over, to give chloroform Dr. Fisher said he would not like to express an opinion on that point. He considered that the cause of death was heart failure while the patient was under an anæsthetic and he supposed the chloroform was the most important part of it. He accepted the coroner's suggestion that death was due to heart failure following a fit of coughing whilst under the influence of chloroform administered as an anæsthetic for a necessary operation.

Dr. COOPER on being asked agreed to this.

Dr. FISHER further stated that he himself had had a large experience in anæsthetics and he considered that in the present case the anæsthetic had been given with great care and attention.

Mr. PHILIP TURNER said he was a registered medical practitioner and was at present acting as resident surgical officer at Guy's Hospital. He quite agreed with the evidence that had been given and he did not think he could add anything to it. He was going to supervise the operation, to direct Dr. Cooper in the removal of the wire. When he arrived the patient was already in difficulties; his breathing was stopping, and so witness simply directed the subsequent proceedings. He considered that death was due to cardiac failure while under the influence of the chloroform. He did not suggest that there had been an over-dose of chloroform. In a case like that the responsibility could not, in his opinion, be divided. The anæsthetist must be responsible for the anæsthetic and the operator for the operation. It was not possible for one man to look after both. He thought it was an invariable custom to have two medical men present at an operation, one to look after the anæsthetic and the other to look after the operation, both men, of course, coöperating.

The CORONER: I do not want in any way to go outside this inquiry, but perhaps you can tell me—is there not some inquiry going on at Guy's Hospital?

Mr. TURNER: There is a very large committee sitting, actually inquiring into the whole question of anæsthetics.

The CORONER: Is that inquiry being made by surgeons or by a special committee?

Mr. TURNER: I am not on the committee, but I believe that the surgeons and anæsthetists and the governors as well are represented.

In reply to another question from the CORONER Mr. TURNER said that the muco-pus, or the ether itself, or both, might have produced the coughing.

The CORONER, in summing up, said that the gentlemen from Guy's Hospital had given very full evidence in the case before them. Of course, in cases of that kind there should be the fullest and most careful inquiry. He might say that during the time he had acted as coroner in the borough of Southwark, as regarded Guy's Hospital this was the thirty-eighth inquiry that he had held into the cause of deaths where patients had died under the influence of anæsthetics administered during operation. It was the duty of the jury in all such cases to inquire not only into the actual cause of death but into the circumstances connected with the death, and it was necessary for them to inquire whether there had been any neglect—he meant culpable or criminal neglect. There was no suggestion in this case pointing to any neglect of any kind at all. The evidence pointed to the A.C.E. and the chloroform having been given in a careful and skilful manner and for a necessary operation. They had been told that the patient had cancer and that it was necessary to remove a portion of the tongue, and that subsequently another necessary operation was about to be performed by the removal of some wire from the patient's jaw when he died under chloroform. This was not a big operation at all nor a difficult one. With regard to the chloroform given, a medical man had told them that it was chloroform made from what chemists called acetone, a product of the distillation of wood and not alcohol at all. The other kind of chloroform used in some other public hospitals was more expensive, but he (the Coroner) did not think it was any better. It was made from ethylic alcohol, on which a duty had to be paid to the Inland Revenue, and this made it much more expensive. It was the custom at Guy's Hospital, he understood, to give acetone chloreform and it was administered in this particular case. The medical men all appeared to be quite satisfied. The gentleman who gave the anæsthetic took all responsibility upon himself. The immediate cause of death they were told in this case was heart failure following after a fit of coughing whilst the patient was under the influence of an anæsthetic known as chloroform given as a general anæsthetic for a necessary operation. If they agreed that the anæsthetic was given skilfully he took it that their verdict would be one of death from misadventure.

Without retiring, and after very brief consideration, the jury returned a verdict of Death from misadventure, the immediate cause of death being heart failure following a fit of coughing whilst the deceased was under the influence of chloroform given as a general anæsthetic for a necessary operation.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8074 births and 4921 deaths were registered during the week ending Dec. 7th. The annual rate of mortality in these towns, which had been 14·8, 15·3, and 16·5 per 1000 in the three preceding weeks, declined again to 16·0 per 1000 last week. During the first ten weeks of the current quarter the death-rate has averaged 15·4 per 1000, the rate in London during the same period being 14·7 per 1000. The lowest death-rates in these towns during the week under notice were 6·0 in Bournemouth, 6·9 in East Ham, 8·1 in Hornsey, and 9·2 in Walsall and in Birkenhead; the highest rates were 23·2 in Oldham, 23·3 in Merthyr Tydfil, 23·4 in South Shields, 24·0 in Rhondda, 24·8 in Bury, and 25·6 in West Bromwich and in Stockton-on-Tees. The 4921 deaths in the 76 towns last week included 388 which were referred to the principal epidemic diseases, against 386, 397, and 424 in the three preceding weeks; they included 112 which resulted from measles, 106 from whooping-cough, 60 from diphtheria, 50 from diarrhœa, 38 from scarlet fever, and 22 from "fever" (principally enteric), but not any from small-pox. No deaths from any of these epidemic diseases were registered last week in Croydon, East Ham, Tottenham, Plymouth, Birkenhead, or in nine other of the 76 towns; the annual death-rates therefrom, however, ranged upwards to 4·3 in Ipswich, 4·7 in Bootle, 4·9 in Burton-on-Trent, 5·7 in Tynemouth, and 9·3 in Barrow-in-Furness. The fatal cases of measles, which had been 73, 91, and 105 in the three preceding weeks, further rose to 112 in the week under notice, the highest annual death-rates therefrom being 1·1 in Salford and in Leeds, 1·3 in Newcastle-on-Tyne, 2·0 in Rhondda, 2·1 in Merthyr Tydfil, 2·9 in Burton-on-Trent, 3·8 in Tynemouth, 4·3 in Ipswich, and 7·6 in Barrow-in-Furness. The deaths from whooping-cough, which had been 76 and 72 in the two previous weeks, rose again last week to 106, and caused death-rates ranging upwards to 1·5 in Hastings and in Oldham, 1·7 in Barrow-in-Furness, in Gateshead, and in Newcastle-on-Tyne, 1·9 in Aston Manor, and 3·9 in Bootle. The deaths from diphtheria, which had been 70 and 82 in the two preceding weeks, declined to 60 in the week under notice; the highest death-rates from this cause being 1·2 in Rochdale, 1·3 in Reading, and 2·0 in Burton-on-Trent and in Stockton-on-Tees. The 38 deaths from scarlet fever were fewer than the number in any previous week of the quarter, and included 19 in London. The mortality from "fever" and from diarrhœa showed no marked excess in any of the 76 towns last week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 5689 and 5686 at the end of the two preceding weeks, had further declined to 5580 on Saturday, Dec. 7th: 554 new cases were admitted during the week, against 667, 636, and 597 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory system, which had risen from 204 to 388 in the four preceding weeks, declined again to 355 in the week under notice, and were 46 below the corrected average number in the corresponding periods of the five years 1902–06. The causes of 58, or 1·2 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, West Ham, Bristol, Bradford, Newcastle-on-Tyne, Hull, and 47 other of the 76 towns; 11 uncertified deaths were registered in Birmingham, ten in Liverpool, three each in Manchester, Sheffield, Gateshead and South Shields, and two in each of seven other towns.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had risen from 15·3 to 19·3 per 1000 in the four preceding weeks, further increased to 20·6 per 1000 during the week ending Dec. 7th, and was 4·6 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 14·6 in Aberdeen and 18·0 in Edinburgh to 22·5 in Perth and 32·4 in Dundee. The 716 deaths in these eight towns were 45 more than the number in the previous week, and included 132 which were referred to the principal epidemic diseases, against 75 and 111 in the two preceding weeks; of these, 79 resulted from measles, 21 from diarrhœa, 13 from whooping-cough, nine from diphtheria, eight from "fever," and two from scarlet fever, but not any from small-pox. These 132 deaths were equal to an annual rate of 3·8 per 1000, which was 2·5 per 1000 above the mean rate last week from the principal epidemic diseases in the 76 large English towns. The fatal cases of measles, which had increased from 29 to 43 in the four preceding weeks, further rose to 79 in the week under notice, and included 48 in Glasgow, 22 in Dundee, five in Greenock, and two in

Paisley. The deaths from diarrhœa, which had been 11, 16, and 36 in the three preceding weeks, declined again last week to 21, of which 12 occurred in Glasgow, six in Dundee, and two in Leith. The fatal cases of whooping-cough, which had been 12 and 23 in the two previous weeks, fell to 13 in the week under notice, and included five in Leith, three in Glasgow, and two in Dundee. The deaths from diphtheria, which had been ten, seven, and none in the three preceding weeks, rose last week to nine, of which three were registered in Glasgow and three in Paisley. The fatal cases of "fever," which had been five and seven in the two preceding weeks, increased to eight in the week under notice, and included three deaths from enteric fever in Glasgow, two from cerebro-spinal meningitis in Leith, and one in Paisley. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 104, 106, and 137 in the three preceding weeks, further rose to 167 in the week under notice, and were 41 in excess of the number in the corresponding period of last year. The causes of 25, or 3·5 per cent., of the deaths were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 1·2 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 18·4 and 21·6 per 1000 in the two preceding weeks, further rose to 26·7 per 1000 in the week ending Dec. 7th. During the first ten weeks of the current quarter the death-rate has averaged 21·3 per 1000, the rates during the same period being 14·7 in London and 13·8 in Edinburgh. The 200 deaths of Dublin residents registered during the week under notice were 38 in excess of the number in the preceding week, and included nine which were referred to the principal epidemic diseases, against 11, 10, and four in the three preceding weeks; they included three from whooping-cough, three from "fever," two from diphtheria, and one from diarrhœa, but not any from small-pox, from measles, or from scarlet fever. These nine deaths were equal to an annual rate of 1·2 per 1000, which was also the rate in London during the same period from the principal epidemic diseases, the corresponding rate in Edinburgh being 0·6 per 1000. The 200 deaths from all causes included 45 of children under one year of age and 64 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons exceeded the number in the previous week. Eleven inquest cases and six deaths from violence were registered; and 61, or more than 30 per cent., of the deaths occurred in public institutions. The causes of seven, or 3·5 per cent., of the deaths registered in Dublin last week were not certified; in London only one death was uncertified, while in Edinburgh the proportion was 2·5 per cent.

THE SERVICES.

THE REPORT OF THE ARMY MEDICAL DEPARTMENT.

THE report of the Army Medical Department has undergone a great change which is, as we think, a distinct improvement. It is far more interesting in that it deals with its subject from a broader view, goes more directly to the point, and supplies more clearly that kind of information which it is most desirable to know. The reports have been hitherto too much overlaid with a mass of figures and details which rather served to obscure than to elucidate the purpose which official publications of this nature should really have in view. As the Director-General points out in his letter to the Secretary of State for War which prefaces the report, previous reports have consisted in the main of two parts—a letterpress and a series of statistical tables. These tables were in the form of abstracts of the detailed statistics furnished by various stations at home and abroad and gave figures relating to the chief diseases or classes of disease without mentioning the less important individual diseases in detail. The letterpress consisted largely of a discussion of these abstracts. The present report also consists of letterpress and a series of tables, the former giving a general history of the health of the army, mentioning the chief causes of disease, their incidence as compared with various years, and the general lines on which the problem of their prevention has been approached. In addition to the tables, which have been compiled on lines similar to previous years, details have been added which give the individual causes of admission to hospital for three of the five groups into which for this purpose the army has been divided. Four of these correspond to the four most important geographical areas occupied by the army—namely, the United Kingdom, the Mediterranean Basin, South Africa, and India. The fifth group is composed of those smaller stations scattered throughout the world which by the comparatively small figures furnished by them are not of sufficient epidemiological importance to merit individual mention.

ROYAL NAVY MEDICAL SERVICE.

The following qualified candidates for the Royal Navy Medical Service have been appointed surgeons in His Majesty's Fleet:—Geoffrey Carlisle, Guy Tyrrell Verry, Gilbert Bodley Scott, Francis Harold Holl, Geoffrey Palmer Adshead, John McCutcheon, Harold Hubert Babington, William Charles Carson, James Herbert Wright, Charles Henry Lambert Petch, and George Augustus Stewart Hamilton (dated Nov. 19th, 1907).

ROYAL ARMY MEDICAL CORPS.

Captain Frederick H. Merry is placed on temporary half-pay on account of ill-health (dated Dec. 7th, 1907).

Lieutenant-Colonel Michael Dundon retires on retired pay (dated Dec. 11th, 1907).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Fifeshire: Surgeon-Major J. W. Moir to be Surgeon-Lieutenant-Colonel (dated Oct. 21st, 1907). Surgeon-Lieutenant-Colonel J. W. Moir is retired, under the conditions of paragraph 103, Volunteer Regulations, with permission to retain his rank and to wear the prescribed uniform (dated Oct. 22nd, 1907). 8th Lancashire: Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel A. R. Hopper (late 8th Lancashire Royal Garrison Artillery (Volunteers), from the retired list, to be Surgeon-Lieutenant-Colonel, with the honorary rank of Surgeon-Colonel (dated Sept. 26th, 1907). 1st East Riding of Yorkshire: Surgeon-Major T. McC. Foley to be Surgeon-Lieutenant Colonel (dated July 20th, 1907).

Rifle: 1st Surrey (South London) Volunteer Rifle Corps: Robert James William Oswald to be Surgeon-Lieutenant (dated Oct. 1st, 1907). 6th (Fifeshire) Volunteer Battalion, The Black Watch (Royal Highlanders): Surgeon-Major (Honorary Captain in the Army) C. E. Douglas to be Surgeon-Lieutenant-Colonel (dated Oct. 18th, 1907). 2nd Volunteer Battalion, The Highland Light Infantry: William Seaton Paterson to be Surgeon-Lieutenant (dated Nov. 1st, 1907). George Jubb to be Surgeon-Lieutenant (dated Nov. 1st, 1907). 1st Cadet Battalion, The Buffs (East Kent Regiment): The undermentioned officer is removed from the Volunteer Force on the disbandment of the battalion:—Surgeon-Lieutenant C. W. Scott (dated June 14th, 1907). 1st Volunteer Battalion, The Royal Warwickshire Regiment: Surgeon-Lieutenant C. H. Howkins to be Surgeon-Captain (dated Oct. 29th, 1907). 1st Bucks Volunteer Rifle Corps: Surgeon-Lieutenant J. C. Baker to be Surgeon-Captain (dated Oct. 23rd, 1907). 5th Middlesex (West Middlesex) Volunteer Rifle Corps: Surgeon-Captain C. E. Goddard resigns his commission (dated Nov. 6th, 1907).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Western Command: Manchester Companies: Lieutenant A. F. Thompson, to be Captain (dated Sept. 5th, 1907); Surgeon-Lieutenant H. G. Smeeth, from the 4th Volunteer Battalion, The Cheshire Regiment, to be Lieutenant (dated Nov. 1st, 1907). Staffordshire Bearer Company: Howard Henry Congreve Dent (late Lieutenant, 3rd Volunteer Battalion, The South Staffordshire Regiment) to be Captain (dated Oct. 13th, 1907).

TENURE OF APPOINTMENT.

The following has been substituted for Article 312 of the Pay Warrant:—

The appointment of Director-General of the Army Medical Service shall be for three years, unless the term is specially extended by the Army Council for a further period not exceeding two years or for such time as may be necessary to enable the holder to complete 30 years' service.

MEDICAL MEN AND THE TERRITORIAL FORCE.

There was a largely attended meeting held at Exeter on Dec. 4th under the presidency of Earl Fortescue (Lord Lieutenant of the county of Devon), when Sir Alfred Keogh, K.C.B., Director-General of the Army Medical Service, gave an interesting address on the Army Council's

scheme for providing the medical organisation required under the new Territorial and Reserve Forces Act. Amongst those present were Surgeon-Colonel J. Raglan Thomas, V.D., Brigadier-General Lord Clifford, Brigadier-General Kirkpatrick, C.B, Dr. H. Davy, and Dr. P. M. Deas. Surgeon-Colonel Raglan Thomas reported that by the authority of the Lord Lieutenant he sent out between 500 and 600 circulars to medical men in the greater part of Devonshire and parts of Somerset, Dorset, and Cornwall, and the replies had been most gratifying. After the lecture a proposition was carried unanimously expressing approval of the scheme and a committee, consisting of Dr. Davy, Dr. J. D. Harris, Mr. E. A. Brash, Surgeon-Colonel Raglan Thomas, and Surgeon-Captain R. Pickard, was appointed to consult with the Director-General and to organise the scheme. Later Sir Alfred Keogh was entertained at dinner at the New London Hotel.

Sir Alfred Keogh addressed a largely attended meeting of medical men at Plymouth on Dec. 5th and again fully explained the Army Council's scheme for organising the medical service of the Territorial Force. Mr. Paul Swain presided and among those present were General Sir J. Leach, K.C.V.O., Colonel G. D. Bourke, C.B., R.A.M.C., Surgeon-Colonel Raglan Thomas, Lieutenant-Colonel F. S. Maude, C.M.G., D.S.O., Lieutenant-Colonel R. Caldwell, R.A.M.C., and Lieutenant-Colonel W. B. Day, R.A.M.C. The meeting was much in sympathy with the scheme and a nucleus of a committee for the district was appointed, consisting of Mr. Swain, Mr. W. L. Woollcombe, Dr. A. B. Soltau, Dr. E. L. Fox, Mr. F. M. Williams, and Mr. A. G. Rider.

As Sir Alfred Keogh's exposition of his proposed medical service for the Territorial Force has already been fully before our readers we need only summarise his remarks on these two occasions. He said that the subject upon which he had to speak might be called "the organisation of the medical profession for home defence." The medical service for years had demanded reorganisation. Disease had never yet been properly prevented in war. They had learnt a lesson from the Japanese as to what really could be done in maintaining the fighting strength of the army. The Director General then proceeded to ask them to consider what the medical service did, the present volunteer medical organisation, and the proposals made to put matters right. Many men during the South African war who should have been in the fighting line were engaged looking after their colleagues. That would not occur again. The work would be done by the medical corps itself and also the work on the lines of communication. No man who was a fighting man would be utilised in these ways. After wars they always had a Royal Commission, sometimes while the war was on, and always the report was that the work of the Army Medical Corps was done very badly. It was not true that they had done badly—certainly not in the South African war. He proposed that instead of having a Royal Commission at the end of a campaign or during the progress of a campaign the gentlemen of the commission had better go out at the beginning of the war and stop that for which they had blamed the medical staff. As far as the Volunteer force was concerned there was not a single hospital provided, no sanitary organisation, no administration whatever, and he thought that the medical men should set the example in this respect. Their whole training should be to be methodical and look ahead. But however skilled the medical corps might be they could not fight disease unless the officers of the whole army themselves coöperated with them, and it was impossible for them to do so unless they were educated up to the standard which the medical men required. He wished them all to be sanitary missionaries, spreading the true gospel of science, and impressing the fact that modern sanitation rested upon a sure scientific basis. After some discussion Dr. C. Childs moved a vote of thanks to the Director-General which was seconded by Surgeon-Lieutenant-Colonel Webb, V.D., and carried with acclamation.

In the evening Sir Alfred Keogh was entertained at dinner. Mr. Swain proposed the health of the guest of the evening and Mr. C. Whipple, senior surgeon, South Devon and East Cornwall Hospital, proposed the health of Colonel Bourke, C.B., administrative medical officer for the district. After dinner a conversazione took place and many points of interest in the scheme were discussed and elucidated.

On Wednesday, Dec. 10th, Sir A. Keogh visited Liverpool and met with an excellent reception from the medical men of the locality.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

At the headquarters of the London Rifle Brigade on Dec. 9th Sir Alfred H. Keogh, K.C.B., Director-General of the Army Medical Service, inspected the classes of the Volunteer Ambulance School of Instruction which paraded in good strength with a full complement of officers at 130, Bunhill-row, London, E.C. After an inspection of the ranks the prizes were distributed. The Maclure Challenge Shield for the advanced class was won by the Royal Fusilier V.I. Brigade Bearer Company. The Hamilton Challenge Bowl was won by the 1st Cadet Battalion King's Royal Rifles. The Commandant's Cup for the best man in the school was secured by Corporal A. W. Brown, Royal Fusilier V.I. Brigade Bearer Company. The Director-General complimented the school, the staff of which had worked so well and for so many years under official discouragement and without recognition. But in the future that would not be so, for they would have both support and official recognition, and he was happy to say that Colonel P. B. Giles would be the principal medical officer of one of the London divisions of the Territorial Force. He was very pleased with the smartness of the men and their steadiness. The number of special certificates gained showed good work on the part of the instructors. Colonel Giles, the Commandant, in thanking the Director-General, said that the teaching of sanitation had been made a special feature in the school, and he hoped that some of the members who had obtained certificates would in the future help in the instruction. He desired to thank the staff for their loyalty and good work. The school is just completing its twenty-first year of existence, and no less than 750 officers have obtained certificates of proficiency after instruction, many having come for that purpose from the King's dominions beyond the seas.

FLORENCE NIGHTINGALE, O.M.

A military correspondent writes: "Some notice of Miss Florence Nightingale's appointment to the Order of Merit should certainly be made in the columns of THE LANCET devoted to the discussion of medico-military affairs. It is a subject of universal satisfaction that the King has been graciously pleased to confer the Order of Merit on Miss Florence Nightingale who by her signal services has enshrined herself not only in the hearts of her own countrymen but, it may even be said, in those of the civilised world. The debt of all armies to her is tremendous and there is no need to tell of her exploits, for her mere name calls up recollections of them. Their lesson has still, perhaps, to be indelibly stamped upon the memory of nations—viz., that just in proportion as any future campaigns approach to the unpreparedness for war and neglect of the most elementary lessons of sanitation and experience which characterised the Crimean war may the same disastrous results be expected to follow."

MOSCOW MILITARY HOSPITAL'S BI-CENTENARY.

On Nov. 21st (Dec. 4th) the Moscow Military Hospital celebrated the two hundredth year of its existence which synchronises with the jubilee of the first medical school and institution in Russia which was established by Peter the Great. On the same day there were published a "History of the Moscow Military Hospital" and a "History of Medicine in Russia."

Correspondence.

"Audi alteram partem."

THE TREATMENT OF PUERPERAL SEPSIS.

To the Editors of THE LANCET.

SIRS,—Your generous notice of my pamphlet on municipal maternity homes by leading article in THE LANCET of Dec. 7th (p. 1624) has, it is needless to say, filled me with gratitude to you and hope for the future of my scheme. Your excellent analysis of the contents of the pamphlet contains all that is essential and all that is relevant to the needs of the great urban communities in this country, and your favourable notice calls the attention to my "Plea" of a vast professional public which the local pamphleteer could never have hoped to reach. I hope and trust that the result will justify the proceeding. But even if the scheme of

municipal maternity homes should be taken up to some important extent I quite recognise that social and professional reforms may make it only a temporary expedient. As you justly say, "The Midwives Act and the new regulations of the General Medical Council relating to the clinical teaching of midwifery ..... will undoubtedly bear good fruit in the future"; but some ameliorations are meanwhile urgently required in those portions of obstetric practice which deal with prophylaxis and treatment in the most serious cases of all; that is to say, the various forms of puerperal fever.

In the almost total absence of clinical instruction on the pathology of the puerperium in British medical schools our young practitioners may be readily induced to adopt measures of treatment of puerperal fever which are not the best, until they have learned from their own observation and possibly unfortunate experience. It is highly desirable therefore that any didactic teaching should be as devoid of error as possible and that methods of treatment recommended for adoption should be simple and practical and should have been well tested by results. If the case reported by Dr. A. A. Warden of Paris in THE LANCET of Nov. 23rd, is critically considered along with your annotation on Drainage of the Uterus there will be found, I believe, considerable room for difference of opinion both with regard to facts of observation and of treatment and also a good deal to dissent from in the conclusions reached. Those of your readers engaged like myself in teaching midwifery might mark certain features of the report and annotation with mere regret and pass on, but the letter on Drainage of the Uterus in Puerperal Sapræmia from so eminent a teacher of obstetrics as Dr. Amand Routh appears to me to demand more serious attention from the colleagues. The teaching from my point of view, both as an old general practitioner and otherwise, is so erroneous and therefore so fraught with possibilities of injurious and even disastrous treatment if generally adopted by medical practitioners that, with all respect to Dr. Routh, I should like permission to call attention to some other opinions and different and, as I think, better methods of treatment.

As to Dr. Warden's case, it appears on the face of it to have been merely one of lochiometra from flexion with slight infection, which received perhaps too much treatment. The flexion is referred to towards the end almost casually; it was nearly the whole case. The temperature did not rise till the fourth day, and was even then not alarming, and though for the report of such a case there is too little said about the pulse, which is the chief criterion of the gravity of puerperal infection, the fact that it was only 110 with the temperature at 103·6° F. appears to prove that there was no "grande infection" then, that is on the seventh day. The remarkable fact that the uterus contained nearly a pint of "brown turbid fluid" appears to have received comparatively little attention. If the case had been left to Dr. Warden and treated as lochiometra produced by flexion, all would probably have been well. If there had been grave infection at the first the sequel to retention of lochia under pressure and intra-uterine douching would have been in all probability puerperal peritonitis. A fact which is also mentioned almost casually is of the highest interest and importance: bacteriological examination of the fluid showed the presence of *bacillus coli*. Professor Budin in consultation would of course advise *écouvillonage*, and equally of course in Paris some preparation of iodine would be employed; but where did the bacillus coli come from? It was almost certainly the result of infection conveyed by the manipulations of an already slightly septic uterus.

If we now turn our attention to the letter which the publication of Dr. Warden's case and your annotation have elicited from Dr. Amand Routh, we shall find, I believe, some very questionable teaching. We may assume that Dr. Routh strongly believes in the truth of his opinions and the efficacy of his methods, and so it is with due deference that I wish to call attention to probably better methods of treatment founded on somewhat diverging theoretical considerations. I was under the impression that drainage of the septic uterus had been universally abandoned for the last 20 years. It was Fritsch, then professor of midwifery at Breslau, whose book on the "Pathology and Treatment of Childbed" was published in 1884, who pointed out the dangers of drainage and put an end to that method of treatment in continental Europe. It is startling to find the practice of drainage still surviving in this country, and in its most dangerous form—the half of the tube in the uterus and "the free ends of the tubes projecting from the vulva." Dr. Routh may be always so assisted in his work that he can keep the vulva bacterium-free; but the vulva is the danger-point in the experience of most accoucheurs. If fluid flowed through the tube so placed it would be in the direction of the uterus. Fortunately the fluid does not flow after the first few minutes, but the stagnant contents of the tube become very soon septic.

A distinction appears to be maintained between cases of "sapræmia" and "septicæmia"; and true septicæmia is said to require "other measures" of treatment. I would respectfully submit that such a distinction cannot be maintained on scientific grounds, and it has always been a disastrous distinction in general practice. There is not now, and there never has been, any criterion by which you could apparently differentiate except the development of symptoms. Medical officers of health tell us that some medical practitioners still retain that method of differentiating in the diagnosis of sore-throat; if the case is diphtheria they can diagnose by the consequences to the patients if they observe the case long enough! The work of Bumm published in 1903 and supplemented by that of Stolz, of Natvig, and of Langemeister and Meissl (Untersuchungen über die Verwandschaft saprophytischer und pathogener Puerperalstreptokokken und über die Streptokokkenimmunität) published last year, only places on a "scientific" basis a fact which every experienced medical practitioner has always recognised—viz., that a case may run on from so-called sapræmia to septicæmia, to pyæmia, and to other stages on the road to dissolution whatever names you may attach to them. Are we, then, to procrastinate until the patient is on the brink of the grave because we cannot at once attach some conventional term to the case, or, worse still, are we first to attach some term from our nomenclature and then feebly wait till our mistake is too obvious even to the "monthly nurse"?

If, as Dr. Routh states, "the uterus should never be curetted with a sharp curette during the ten days following labour in any infective case," why should the curette ever be used at all? In the cases in which the curette is most urgently required there is a fatal termination before ten days, or if recovery takes place irreparable injury has been done to the pelvic organs and to the general health. The reason for the delay is stated by Dr. Routh to be the fear of interfering with the granulation wall of Metchnikoff—"the protective leucocyte sheet." But he has already assented to "scrubbing" the lining membrane of the uterus with a gauze ball. Does the sheet, then, stand the scrubbing but not the scraping? And what evidence is there of the constant presence of any granulation wall or that it protects? None, or next to none. It is not a constant feature for one thing, and when severe symptoms arise is not that a proof that the wall, if it ever existed, has been scaled or breached? Are we then to stand idly by and watch the attack and defence, our feeble therapeutics degenerated to mere bottle-holding, and our prognosis just a backing of the victor? No; some encourage us by the assurance that we can assist the phagocytes to defend by means of artificial leucocytosis or, according to the newest formula, by increasing the opsonic index of the blood!

Dr. Clarence Webster of Chicago puts the doctrine and practical inference dogmatically: "Curettage is dangerous because it breaks up this protecting line." But as often as not the granulation wall does not exist, and if it has been built it is a poor protection to the organism in case of vigorous attack and, besides, artificial leucocytosis (Nukleinkochsalzbehandlung) is not treatment for an emergency. It is easier to quote than to paraphrase, and I may perhaps be permitted here to quote from an article of my own on the Surgical Treatment of Puerperal Fever which has just appeared in *Surgery, Gynecology and Obstetrics* of Chicago: "In the whole history of medicine there is probably no episode to compare with the universal suspension of judgment among humble 'practical' men and the credulous acceptance of the dictum of 'science' and its consequences, such as is shown in the reception given to Metchnikoff's theory of phagocytosis—'Tho' Nature red in tooth and claw with ravine shrieked against his creed.'" What does all this recent scientific jargon say more than *vis medicatrix naturæ?* If the protective forces did not fight all through the vascular and lymphatic systems no infected organism could escape dissolution. The unreal distinction between sapræmia and septicæmia and this localising of the struggle at a ruined wall have paralysed therapeutics and allowed thousands of puerperal women

to perish when suitable measures promptly and vigorously applied might have saved them.

The true theoretic basis of our treatment of sepsis in childbed whether the lesion be the pseudo-diphtheria of lacerations or septic endometritis is: "Puerperal fever is wound fever; wound fever is wound poisoning." We have also confidence that we are pursuing in a healthy organism some destructive agent which we may overtake and annihilate, not dealing with an individual woman of hopelessly deteriorated general health or already ruined blood, if we hold fast the established doctrine that "all infection comes from without." We are all agreed with regard to any given case that the earlier the symptoms appear the worse the prognosis, and I presume we also agree that rigor is the one obvious and infallible indication that the case is severely septic and the bacteria are having the best of the battle. It was the unanimous opinion of the old masters in the obstetric art that *immediate action* on the appearance of symptoms was of vital importance—lancet, cathartic, blister, emetic—there must be no delay. Since the modern doctrine of the etiology of puerperal fever came to be universally adopted Fritsch was among the first to insist on prompt treatment; and quite recently Sitsinsky, who has had such wonderful success by his local alcohol treatment—not one death in 246 cases of sepsis occurring among 3147 puerperal women—has declared: "I maintain that the earliest possible treatment is the chief condition of success." There is only one cause of puerperal fever, the poisoning of a wound; and there is only one method of treatment worthy of consideration, the cleansing of the wound with the greatest possible promptitude. The easiest and most effective method of cleansing the wound is to use the curette—the so-called "sharp" curette—*with the addition of certain supplementary measures which are essential to success.* To the "sharp" curette the objection is raised that you may injure, even perforate, the uterus. With stupidity and a sound digestion a man may accomplish much. A gynæcologist with little muscular sense and as little judgment may force even a curette through the puerperal uterus; but similar objections may be raised to the use of the male catheter or even to a scalpel. Another objection, as we have seen, is that you break down the granulation wall of phacocytes which is nature's method of protecting the organism. But leaving pathological conditions to "nature" or feeble meddlesomeness amounts to therapeutic nihilism or worse. Is not the annihilation of the assailants a surer and more effective protection? Attack is the best defence here as it is so often in war, and you can with certainty destroy the pathogenic organisms by means of the curette and the supplementary measures.

We are also told that if you are to clear out the cavity of the uterus the finger is the safest instrument. When I read these *verba magistri* I sometimes wonder if the writers have ever seen the sort of cases with which we are too familiar in this part of the country. In the large non-contracting uterus of early and severe puerperal sepsis you cannot reach the whole uterine cavity with the fingers. I have measured, and frequently seen the measuring of, the cavity on the curette with graduated stem, and the length runs from 6 to 7 and even to 8 inches in some cases. Besides, even if you could reach, the fingers do not help you much with the most dangerous contents of the uterus, the fungous infected decidua. With the finger, in fact, you do the maximum amount of injury while conferring the minimum amount of benefit. As to the technique of the curettage, which I have practised for about a quarter of a century, I cannot expect you to grant me the space to describe it in detail. Let me indicate only. If "puerperal fever" in the early stage has been diagnosed, sapræmia or septicæmia, it matters not which, the uterus must be cleared out and the streptococci destroyed. The pathogenic organism is at first almost invariably the streptococcus. Mixed infection is not common. If a rigor has occurred active measures should be resorted to without wasting one precious hour.

Should the patient be anæsthetised? With many of our cases here the pulse is very rapid or even running, and as heart failure is the thing most to be feared at this stage a general anæsthetic may just turn the scales against the patient. I would therefore submit to the judgment of the profession the production of a *Dämmerschlaf* or partial anæsthesia and indifference to manipulations which can be obtained by morphine, alcohol, and cocaine. It is as effective, and, I believe, it is a safer, method than the employment of scopolamine and its adjuvants; in any case it is suitable for general practice in the absence of complete professional assistance and the scopolamine method is not. The patient is placed in the lithotomy position in a good light, the parts are exposed by suitable speculum and cleansed; the uterus is held steady by volsellæ and the "sharp" curette comes into action, while the uterus is steadied by the left hand on the fundus. The manipulations consist in drawing the instrument gently down so as to scrape the surface superficially. Without haste and without pause the whole lining of the uterus is overhauled; you do not seek to bring out the "uterine cry" in curetting the septic puerperal uterus.

The second part of the process consists essentially in swabbing out the uterine cavity with pledgets of cotton wool or scraps of lint soaked in a germicide solution. Dr. A. Knyvett Gordon at Monsall Hospital prefers izal. I have for years used a hot strong solution of corrosive sublimate. I see that Dr. Amand Routh speaks well of strong iodine solution, which is, or used to be, the chemical almost universally employed in Paris. After thorough swabbing and scrubbing with the germicide the uterus is *gently* packed with strips of gauze soaked in the same solution; the vagina is filled with a suitable tampon and the essentials of the curettage are complete. Non-essential details are the administration of ergotin and strychnine; highly desirable details are the use of polyvalent serum, and a copious supply of fluid by rectum, mouth, or subcutaneously according to circumstances. The patient when put to bed promptly goes to sleep, and she need not again be disturbed oftener than once in 24 hours except to take nourishment.

For special advantages in seeing all the varieties of puerperal fever and for recent concentrated experience I am indebted to Dr. Gordon, superintendent of Monsall Fever Hospital, who takes a special interest in this subject. The professional work at Monsall in the treatment of puerperal fever, of which there is an unfailing supply, and in studying the pathology of the disease in all its phases is in my opinion unique in this country in its efficiency and its therapeutic results.

If I may be permitted to give a case illustrating the method just described I need not carefully select something sensational from a large and dismal repertory, but I can set forth the notes of the last case in which I had the opportunity of consulting with Dr. Gordon, which was so recently as on Sunday, Nov. 17th. The notes are by Dr. T. Ronaldson Smith, assistant medical officer.

The patient, a multipara, aged 35 years, was admitted to Monsall Hospital on Nov. 15th suffering from puerperal fever. The history is that she was confined on Nov. 9th in the presence of a midwife only and that the labour was easy and of two hours' duration. She is said to have been well until Nov. 13th, when the present illness commenced with headache and shivering. The temperature was not, however, taken until the 15th, when medical aid was summoned for the first time. The patient was then intensely ill and she was at once removed to Monsall Hospital. On admission she was obviously suffering from profound septic intoxication. Her mental condition was one of partial coma, alternating with maniacal fury. The pulse-rate was 140 and the temperature 103·6° F. The abdomen was distended in its lower segment but fairly mobile. The uterus was palpable one inch below the umbilicus. She was partially but sufficiently anæsthetised with brandy and morphine and the uterus was curetted by Dr. Gordon and its cavity swabbed with undiluted izal fluid and plugged with sterile gauze. The cavity measured eight inches in length and there was little or no contraction after the curetting. Only a little placental débris was found together with general endometritis; there was laceration of the cervix, most marked on the left side. 50 cubic centimetres of Messrs. Parke, Davis & Co.'s polyvalent antistreptococcic serum were given subcutaneously. Swabs from the uterine cavity gave a free growth of streptococci in almost pure culture, but the blood was sterile. The leucocytic count was 4700 only. From this point onwards for a week there was but little change in the mental condition, but the pulse-rate diminished while the leucocytic value increased. As parametritis had been found to be a complication of the uterine sepsis and as there was no sign of uterine involution and the discharge was slightly fœtid the uterus was swabbed again with izal on Nov. 18th. This was followed by gradual diminution in the size of the cavity until on the 25th it was found to measure four inches only. After Nov. 22nd a steady fall in the pulse and temperature set in with some mental improvement, and the

patient is now (Dec. 7th) convalescent. There is considerable parametric thickening, but no sign of suppuration.

It may be noticed by the reader that the morphine and alcohol method of anæsthesia was employed in this case. Dr. Gordon informs me that since he adopted this method at my suggestion about 12 months ago he has never used any other for mere curettage. It is, in my opinion, not too much to expect that some modification of safe *Dämmerschlaf* may be found sufficient for operation in puerperal peritonitis. But of that another time. It is sufficient for vaginal incision and drainage.

Here is another illustrative case which requires no comment in view of what we sometimes read about the innocuous nature of "sapræmia" and the tolerance of delay. The patient was 26 years of age and was confined on Sept. 18th, 1905. She had had one child and no miscarriages. Details of labour, given by the certifying physician: (1) Duration, 15 hours; (2) forceps were used; (3) the hand was not introduced into the uterus; (4) a certifying physician was present at the delivery; (5) no midwife attended; (6) hæmorrhage after delivery was not severe; (7) the vulva was covered with "pad" and vaseline. Signs subsequently to delivery with dates: Pyrexia, yes; rigors on second day; sweating, yes; diarrhœa, yes; vomiting occurred once; abdominal pain, yes; delirium, blank; other signs, blank. Details of treatment with dates: Injections: (*a*) vaginal, twice daily; (*b*) intra-uterine, twice daily; curetting the uterus, blank; any other operative measures, blank. [*Note by Dr. Gordon.*—The woman is dead. She was admitted moribund with obvious general peritonitis and died within 24 hours. The abdomen was found post mortem full of pus which was coming from the ends of both Fallopian tubes. The uterus contained a large quantity of decomposing placental tissue. The case was not admitted until the tenth day and the doctor was present at the confinement.]

Although my own opinion is that the introduction of the *écouvillon*, or bottle-brush, into practice was a counsel of feebleness, still there can be no doubt that if the instrument were generally known to medical practitioners the use of it would probably preserve many lives and the health of a vastly larger number. Timid or inexperienced men, especially those isolated in practice where assistance was hard to procure, would probably use the bottle-brush with supplementary swabbing when they would shrink from the curette. Your annotation calling attention to the *écouvillon* and your recommendation of it cannot fail to make many practitioners reflect whether they are acting fairly by their patients in trusting to the old futilities of dosing and drugging and mere douching in puerperal fever cases—treatment proved to be a disastrous failure by the practice of generations of their predecessors.

There is a special timeliness in your calling attention to this subject now. Wherever the Midwives Act is administered with anything like efficiency many cases such as have been fatally neglected hitherto must now come under the care of medical practitioners. These cases will be largely puerperal infection or abnormal labour in which the prevention of infection, if it is not too late, must be almost the chief concern of the doctor. In any case, whether the individual practitioner uses the curette, the bottle-brush, or the swab saturated with alcohol or iodine, it is to be hoped that each and all will keep in mind the dictum: "*I maintain that the earliest possible treatment is the chief condition of success.*"

I am, Sirs, yours faithfully,

Manchester, Dec. 9th, 1907. WILLIAM J. SINCLAIR.

ACUTE PULMONARY ŒDEMA

To the Editors of THE LANCET.

SIRS,—The medical profession should feel much indebted to Dr. Leonard Williams for his very interesting and instructive article on the above subject in your issue of Dec. 7th. Like Dr. Williams, I am much surprised that this important and often rapidly fatal affection should be almost entirely ignored in text-books of medicine. This, perhaps, arises from the fact that text-books are too frequently compilations in the study rather than the records of experience or observations of facts. I know a gentleman who wrote a very readable and original article on scurvy in one of the modern text-books without, I believe, ever having seen a case. Anyone who reads a couple of papers, such as THE LANCET and the *British Medical Journal*, need not trouble his head much about medical text-books. Now that the affection is more frequently finding its way into current medical literature it may be expected that the compilers will digest the observations of others and hand down the product as the result of their experience. In order to assist those gentlemen I should like to add a few observations to the valuable record of Dr. Williams.

At the Medical Society of London on Dec. 12th, 1887, the late Sir Benjamin Ward Richardson made a very important communication under the title "Pulmonary or Pneumo-Paresis." This paper was published in full in the first number of the "Asclepiad" of 1888. The cases recorded were evidently subacute cases of pulmonary œdema and all ended fatally. He looked upon the affection as essentially a pulmonary paralysis and that the nutritional arteries of the lungs were primarily affected.

In the *Medical Examiner* of Sept. 7th, 1876, I recorded "A Severe Case of Acute Pulmonary Congestion, with most Profuse Bronchorrhœa, associated with Granular Kidney; Rapid Recovery." This was a male patient, aged 55 years. The attack began on retiring to bed after a convivial evening.

He was a man of stout build and well-formed chest, whom I found sitting up in bed troubled with incessant cough and most profuse expectoration. His face was livid, countenance very anxious, and his whole surface covered with cold, clammy sweat. Extremities very cold; pulse frequent, small, and weak; breathing hurried and expiration entirely replaced by coughs. Expectoration frothy and so profuse as to form a continuous running stream from his mouth into the receptacle. On examination of his chest the vesicular breathing was scarcely appreciable, but numerous coarse mucous and a few snoring râles were universally present. The percussion note was somewhat defective in tone, but there was no marked dulness at any spot. *Heart.*—The extent of dulness was not unusually large and the impulse was not perceptible. The sounds were dull, but not attended by any murmur. Hepatic dulness normal, and he mentioned that his urinary secretion was pale and abundant. Subsequently his urine was found to be pale, of low specific gravity, slightly albuminous, and the deposit contained numerous granular casts of medium and large size, granular epithelium, and débris. He had recently been under treatment at the Moorfields Ophthalmic Hospital, and the Liverpool Eye and Ear Infirmary for impairment of sight, but otherwise he considered himself in fair health.

On the night in question he retired to rest before 11 o'clock after a convivial evening and feeling rather better than usual. He was very buoyant in spirits and even after going to bed he talked freely and loudly to his family about the pleasant times they had spent in the Antipodes. In this state of joyous excitement the cough began to annoy him, so that he requested his family to stop the colloquy as it was bringing on the cough. It quickly increased, however, in severity and the expectoration became so profuse that by the time I saw him (an hour and a half after the onset of the attack) it had amounted to about one and a half pints.

That this case of acute pulmonary hyperæmia with œdema was a very urgent one may be apparent to the reader, but much more so to those who saw the patient. As a few hours would turn the balance one way or the other in the issues of life and death the treatment must be prompt. But owing to the patient's collapsed and rapidly sinking condition I could not for a moment think of reducing the vascular pressure within the lungs by venesection. I adopted an opposite course—viz., I had his thorax incased in sinapisms for two hours, and his temperature raised by a number of hot-water bottles in his bed. I ordered him five grains of carbonate of ammonia, 15 minims of compound tincture of camphor, and an ounce of infusion of senega every hour; also a tablespoonful of brandy every hour between the doses of medicine.

The treatment had the desired effect and by about 3 A.M. the cough had greatly abated and the profuse bronchorrhœa had ceased, over two pints having been expectorated in about three hours and a half. He had a few hours sleep, and about mid-day he was, comparatively speaking, well. The cough was only an occasional occurrence, the expectoration slight, and the chest was almost free from râles. The pulse was still very weak but reduced to 100 per minute; heart sounds dull, &c.

I have seen a good many cases since then, but even now I am not quite settled in my own mind as to the etiology and pathology of the affection. It is a very common termination of many acute diseases and I think in the majority of cases there is cardiac failure whether the arterial blood pressure has been previously high or not. The most œdematous lungs I have ever seen occurred in a strong, healthy man who died from hæmorrhage half an hour after being stabbed in the chest. This is not very encouraging for those who look upon venesection as a panacea for this affection. I have seen it occur in a case of acute bronchitis in a patient who was in a cold frosty bedroom. In this case the bronchial tubes were full of secretion and the patient was being asphyxiated. A cure was rapidly effected by hot bottles to the patient, sinapisms, and quickly raising the temperature of the room to about 75° F. In these cases atropine is a favourite remedy with me.

The following case I saw at Hampstead on July 29th, 1907, with Dr. Fleming and Dr. J. Ewing Hunter. The patient, aged 66 years, was a short, spare man, with rather rigid chest walls. He spent the greater part of his life in Persia but he has been in this country for the last 20 years. He has always lived freely and used to be very stout but he has been in

failing health for a long time. He stayed at Colwyn Bay last year but did not derive much benefit from the change. He has been suffering from general anasarca, ascites, and fluid in both pleuræ. Heart's area not much increased; blood pressure raised. He has been under the influence of digitalis lately. Pulse 60, regular, fair volume, raised tension. Urine has been of low specific gravity and contains a cloud of albumin. At present there is a considerable quantity of fluid in both pleuræ and the anasarca is very extensive, extending up to the level of the lower ribs, and both upper extremities are swollen. He was propped up in bed and the urgent symptoms seemed to me to depend on the fluid in the pleura; accordingly 50 ounces of fluid were drawn off from the right pleura, which contained the greatest amount, and one drachm of adrenalin solution injected. He bore the operation well and felt quite comfortable. We left him for half an hour while we had afternoon tea, but the nurse called us as severe coughing had commenced. We found him suffering from incessant cough and bringing up expectoration of a frothy character. Pulse frequent, quick, small and compressible. We gave him hypodermically a quarter of a grain of morphine and $\frac{1}{100}$th of a grain of atropine; this had not much effect, and he afterwards got $\frac{1}{100}$th of a grain of atropine, and then $\frac{1}{50}$th of a grain of atropine. This had the desired effect; the cough and expectoration ceased, but he passed into a comatose condition. We watched him till I left in time to catch the midnight train, and by this time he was regaining consciousness. During this time we noticed that the fluid in the *left* pleura was diminishing.

On July 31st I received the following letter from Dr. Fleming:—

> You will be glad to hear that our patient is doing well. I sat with him all night and he made slow but steady progress, and to-night and all afternoon he has had a pulse of 65-70, quite regular, and of fair volume. The cough is somewhat troublesome, but still much better than last night. His complexion is good and circulation active. He is quite bright and chatty, taking food moderately, but desperately thirsty; the kidneys are not doing their work much better. The pleuræ are practically dry, and dry friction sounds can be heard over both bases.

Contrary to my usual practice I did not inject any air into this man's pleura as he had a large quantity of fluid in his other serous cavities. I am inclined to think now that a small quantity of air in the pleura would have been sufficient to have prevented the œdema of the lungs. The further progress of the case has no bearing on this question, but when I last heard of him on Oct. 13th he was alive and all the dropsy had disappeared.

Œdema of the lungs is always a very dangerous condition and one which invariably demands prompt attention. It arises under such a variety of circumstances that it is difficult to formulate any rules which would be applicable to all cases. I think it is important to keep down the arterial tension and thus lessen any backward pressure in the lungs and so general blood letting which acts directly on the arterial system may be useful in certain cases, but usually when the medical man sees the case the arterial tension has fallen and the venous pressure risen, and in such cases venesection cannot be of much use. It is always well to maintain the heart's action; hence cardiac tonics, such as strychnine, squills, and digitalin, are useful, and atropine especially so. The calcium salts would be useful except that in a considerable number of cases there is a tendency to thrombosis in the pulmonary artery, and moreover the action of the salt is rather slow unless a solution be injected under the skin. In addition to cardiac tonics the patient's temperature should be maintained by external warmth, sinapisms, and the air of the apartment should be pure, warm, and dry. In subacute cases, such as those described by Sir B. W. Richardson under the title "pneumo-paresis," I recommend a light, dry, salt-free diet, a warm dry atmosphere, effleurage, and an occasional dose of atropine, and a mixture of tincture of iodine and chloride of calcium. The lime salt can also be prescribed with some other iodine preparation, such as the syrup of iodine and tannic acid. Small doses of thyroid also do good by increasing metabolism and lessening the viscosity of the blood.

I am, Sirs, yours faithfully,

Liverpool, Dec. 8th, 1907. JAMES BARR.

To the Editors of THE LANCET.

SIRS,—The interesting article by Dr. Leonard Williams in THE LANCET of this week on Acute Pulmonary Œdema prompts me to record a case which occurred in my practice a few weeks ago. A man, aged 53 years, was under my care from February to the end of August of this year suffering from cardiac weakness, with no valvular affection but much œdema of the legs. He also had perihepatitis, probably specific, and some gouty symptoms. Under treatment his condition greatly improved and the œdema quite disappeared. On Oct. 17th, some six weeks after I had last seen him, while talking with some friends in the morning, he was suddenly seized with dyspnœa. I was sent for, but not being at home did not see him till 1.15 P.M., about an hour after the commencement of the attack. In the meantime another medical man saw him. I found him in apparently a moribund condition, colour livid, lungs bubbling all over with moist râles, and skin perspiring profusely. His breathing was rapid and laboured, and his pulse, though rapid, was of fair volume but not of high tension. He said that he thought he was "done for." Bearing in mind the influence of atropine in checking the profuse pulmonary secretion due to pilocarpine, I injected hypodermically $\frac{1}{50}$th grain of atropine sulphate and $\frac{1}{30}$th grain of strychnine. When I next saw him at 3 P.M. he was sleeping soundly, and though his breathing was still heavy the moist sounds had quite disappeared. He slept for about five hours, and when I saw him in the evening he said that he felt almost well. I had also given him a mixture containing sp. ether. nit., digitalis and ammonia, one dose of which he took before going to sleep. Next day I put him on a mixture containing pot. iod. and tr. belladonnæ with Guy's pills. He took this mixture till Nov. 11th when on account of slight rheumatic pains I altered it to one containing digitalis, strychnine, and citrate of potash. At this time he was well enough to go out and I was seeing him twice a week. At 4 A.M. on Nov. 14th he was seized in bed with severe dyspnœa, managed to get downstairs, and was dead in five minutes. Whether or no the atropine injection caused the rapid improvement in his first attack I cannot say, but I should certainly try it in any future case. I regret that I omitted the belladonna when I altered his prescription on Nov. 11th.

I am, Sirs, yours faithfully,

Dec. 7th, 1907. R. D. MOTHERSOLE.

UNIVERSITY OF LONDON GRADUATES' ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—At a meeting of the council of the University of London Graduates' Association, held on Wednesday, Dec. 4th, attention was called to the following statements which appeared in THE LANCET of Nov. 23rd:—

> This latter body [the University of London Graduates' Association], as we are informed, has constituted itself an association for promoting the election by convocation to the Senate of candidates representing the views of external students alone, and for opposing the election of any recognised teachers.

I was instructed by the council to place the following facts before you and to appeal to your courtesy and sense of fairness to give them as wide a publicity as you have already accorded to extracts from the "literature" of the University of London Graduates' Union. The objects of our association are clearly expressed in the subjoined extract from the rules.

> (*a*) To assist all graduates of the University, whether resident in or out of London, to exercise their legitimate influence on the work and development of the University.
> (*b*) To secure that the representatives of Convocation on the Senate shall be graduates who, whilst desirous of aiding the development of University teaching in London, will make it their aim to continue the imperial work by which the reputation of the University was made and to keep the degrees and distinctions of the University open to all comers on terms of equality and impartiality.
> (*c*) To promote intercourse amongst the graduates of the University and maintain interest in its affairs.

The association has always been most anxious to aid the development of both sides of the work of the University; at no time has it shown any disposition to "oppose the election of recognised teachers" as such, and in proof of this I desire to point out that in 1905 it promoted the candidature of Dr. Walmsley in the Faculty of Science, in 1906 that of Dr. E. G. Graham Little in the Faculty of Medicine, in 1907 that of Professor Ernest W. White in the Faculty of Medicine, and of Dr. John Wade in the Faculty of Science. All these gentlemen are and were recognised teachers. Moreover, Professor Loney, a recognised teacher and member of the senate, is a vice-president of our association, and its roll of members comprises a large and ever-increasing number of

recognised teachers and others engaged in the internal work of the University. Its present president is Sir Joseph Walton, its past presidents have been the Right Honourable Lord Justice Fletcher Moulton and the present vice-chancellor of the University. All these distinguished men would have refused to be connected with the association had it desired to represent the views of external students alone. Indeed, it is this essential and consistent absence of all narrow partisanship which has helped to give our association such a predominant following among the graduates.

My Council feels assured that it is only necessary to draw your attention to these facts in order to convince you that the association is as anxious as the union can possibly be to promote the welfare of the University as a whole.

I am, Sirs, yours faithfully,

WALTER R. WARREN,

Hon. Gen. Secry., Univ. of London Graduates' Assocn.

2, Hare-court, Temple, Dec. 10th, 1907.

"THE DANGERS OF CELLULOID."

To the Editors of THE LANCET.

SIRS,—Our attention has been called to an erroneous and misleading article headed "The Dangers of Celluloid," which appears in THE LANCET of Dec. 7th, and we shall be glad if you will inform us where you obtained this information and why you published it without taking any steps to verify it. As the publication of such an article in a paper of such far-reaching influence as yours is calculated to damage us very considerably in our work we call upon you for an immediate apology and full contradiction in accordance with the facts of the case.

Taking the mis-statements in the order of their occurrence in the article in question, you first state "the ignition of this film was sufficient to involve very rapidly the entire factory in flames." The building is not a factory in the ordinary sense of the term, but a photographic studio and dark-rooms in which photographic images are produced upon sensitised cinematograph film by the usual photographic processes. Please note that the film comes to us from America already manufactured and sensitised. The entire building was *not* involved in the flames, only one small portion (about one-quarter) being affected.

You next state that there were 27 miles of celluloid film on the premises and that "it is quite evident that if fire had reached them an enormous conflagration, if not explosion, would have ensued." As a matter of fact, the entire film contents of the premises measured 158,000 feet, or, roughly, 29¾ miles. Of this, *144,000 feet, or 27¼ miles, was consumed in the fire*, and there was neither any sign of explosion nor even noticeably large conflagrations. The entire remainder of the film which was saved and which you appear to regard as a menace to the neighbourhood measured 14,000 feet, or in round numbers 2¼ miles. In other words, ten-elevenths of the entire stock was burnt, one-eleventh was saved. Apparently you have a very erroneous conception of what a mile of cinematograph film represents in the matter of bulk. For your information we may state that the film is stored in cylindrical tin boxes measuring 6¼ inches across and 8¼ inches deep. Each of these boxes contains 2000 feet, or well over one-third of a mile. 100 feet of film weighs just under 7 ounces, and that is not all celluloid.

The occurrence of this fire has proved conclusively that the existence of such "a factory" as ours is not a risk to surrounding property, and the fact that the outbreak was stopped with far more ease than it has ever been possible to stop a fire in a private house in Walton has clearly proved that there is no more danger to surrounding property than if the building were a private house. We may mention in this connexion that the captain of the fire brigade (who is also the council surveyor and perfectly familiar with the premises) did *not* state at the inquest that he considered the place to be a private building. He said he regarded it as a photographic studio.

We must ask you to give at least equal prominence to this letter or to a sufficient other contradiction of your mis-statements as that which you gave to the original article.

Yours faithfully,

For the HEPWORTH M'F'G. CO., LTD.,

C. PARFREY, Secretary.

15, 17, Cecil-court, Charing Cross-road,
London, W.C., Dec. 9th, 1907.
Theatre and Factories: Walton-on-Thames.

ON MOBILITY OF THE KIDNEYS.

To the Editors of THE LANCET.

SIRS,—The discussion of the question of mobility of the kidneys recalls to me the following case which impressed me much at the time and may be worth recording; it represents, at any rate, the proverbial ounce of fact, and so far as it goes it supports the contention of Dr. Hector Mackenzie that a mobile kidney, even when present in a case of hypochondriasis, is not necessarily the cause of the nervous symptoms.

In October, 1899, I was called to see Mrs. Z in the following circumstances. The wife of a well-to-do farmer and the mother of a grown-up family, Mrs. Z had been for several years suffering from dyspeptic hypochondriasis of increasing severity. She had been a patient of Dr. X, but a week before I saw her she had consulted Dr. Suckling. Dr. Suckling found a mobile right kidney and expressed his opinion that this was the cause of her symptoms, advising treatment by a belt. One result of this discovery was that the patient insisted on changing her doctor, saying that she could have no further confidence in one who had for so long overlooked the cause of her illness. It was in vain that I combated this decision. She presented when I first saw her a typical picture of hypochondriasis; her depression was intense and she had long been incapable of the slightest exertion although previously an active, hard-working woman. She was much emaciated, with sunken features and a yellowish-white complexion, and the abdomen was flaccid and pendulous, so that it was particularly easy to palpate the internal organs. Belts and bandages were tried with no appreciable benefit and after about six months of treatment, during which time no real improvement took place, she gradually ceased doctoring. Some 18 months afterwards I was astonished to see Mrs. Z walk into my surgery looking a picture of health. When I inquired what had cured her she told me with a good deal of diffidence that she had been persuaded to take a course of —— —— pills, although she had no faith in patent nostrums, and that her condition had improved so rapidly that within four or five weeks she was practically a different woman. She had gained her original weight, had a good appetite and colour, slept well, and was fit for a good day's work. As far as I know her cure has been permanent and she remains well to this day. She had taken courses of iron of various kinds when under medical treatment. It seems to me that a variety of fairly obvious morals may be drawn from this case.

I am, Sirs, yours faithfully,

Bromsgrove, Dec. 3rd, 1907. CAMERON KIDD.

FORMIC ACID AND THE FORMATES.

To the Editors of THE LANCET.

SIRS,—As regards Mr. J. S. Mackintosh's letter in your issue of Dec. 7th *re* the action of formic acid and a diet of ants, perhaps he and other of your readers may find the following extract from "The New London Dispensatory" of 1676 of interest. In Book II., "Of Insects," p. 260, there is a paragraph as follows: "Formica, Murmos, Μόρμηξ, The Pismire, or Ant. It is a small but a wise Creature, gathering its food in Summer in the full Moons, and resting in the new Moons: They are like a Common-wealth, and gather Corn, which they dry, and bite at both ends, that they may not grow: They wear away Stones by their assiduity, and make beaten Roadways; they help one another in drawing their burthens, dam out water, and bury their dead. The greater lead the way, and the lesser drag the Corn; and when dirty, they cleanse themselves before they enter into their habitations: They teach the young to labour, but expel the idle, and when they carry their grain, it's said to be a sign of foul weather. They cast up the Earth over the mouths of their Caves (that the water may not enter in) wherein they have three Cells; in the one they live, in another they breed and bury, and in the third they keep their Corn. They generate in Winter, bring forth Eggs, which in Spring are Ants; when old, they grow winged, and then suddenly after die. 1. The Ants are hot and dry, excite Lust, and by their sharp scent, wonderfully refresh the Spirit: the greater and winged, with a little salt, cure the Psora, or Scab, and Leprosie. 2. Their Eggs help thickness of hearing and deafness: being rub'd on the skin, make it smooth, and taken inwardly expel wind. 3. Their Eggs with Bats blood is a depilatory, used three or four times a day. 4. The Acervus, or Ant-hill, strengthens the nerves, is Anodyne, and helps Gouts, Palsies, Convulsions, and Suffocation of the Womb being applied. 5. The Oyl of

Winged Ants, by infusion for forty days, provokes Lust, and helps the Gout and Palsy. 6. Liquor Formicarum. Take them cleansed, put them into a narrow-mouthed Glass, stop it, set it in brown bread in an Oven, and take it out therewith, which filter and keep for use. Inwardly it causeth magnanimity, and cures the Stone; outwardly, it helps suffusions of the eyes, cures the Itch, and dissipates Corns and Warts."

The allusion to the aphrodisiac properties of this very modest insect seems to show that Mr. Salmon (the author of this exhaustive and very interesting treatise on Pharmacology) had had some experience of the tonic properties of formic acid. The mention of the morally tonic effect of this drug in Mr. Mackintosh's letter makes Salmon's observation *re* the magnanimity caused by a dose of liquor formicarum very interesting. As regards the immunity possessed by ant-eaters, to the effect of the formic acid they are constantly imbibing, would it not be a matter of surprise if they had *not* become habituated to the drug? If they were deprived of their daily dose it is to be reasonably expected that they would suffer in much the same way as the habitual user of any other stimulant. The picture drawn of the ant-eater by Mr. Mackintosh would stand very well for the human habitué of stimulants. Other insectivora such as the armadillo, not living exclusively upon ants, are lively enough.

I am, Sirs, yours faithfully,

Liverpool, Dec. 6th, 1907. H. G. HIGGINS.

THE TUBERCULIN OPHTHALMIC REACTION.

To the Editors of THE LANCET.

SIRS,—A good deal of discussion will probably take place in your columns about the reliability of Calmette's tuberculin test, and I await with considerable interest the result of the tests now being carried out at the London Hospital. That it is not infallible I have already found in a small series of cases tested during the past six weeks. I have found three cases of pulmonary tuberculosis where a Roentgen examination demonstrated extensive mischief (one case was tested on two occasions) and where tubercle bacilli were found in the sputum, which did not react in the slightest to this test, but I have also found some very early cases give a sharp reaction. On the other hand, the diagnosis of a swelling in the neck of a patient aged 48 was much simplified by a very sharp reaction, and when opened the pus was found to contain tubercle bacilli. An ulcer on the chin of a child aged ten, which appeared to be of a tuberculous nature, and which had resisted treatment for three years, was tested and gave no reaction and eventually proved to be non-tuberculous and was cured by the extraction of a carious lower molar. Three out of four cases of lupus erythematosus gave a very sharp reaction, and the fourth case was certainly not active; a case of lupus vulgaris which had been cured by the x rays gave no reaction. Two cases of enlarged cervical glands in children likewise gave no reaction and proved to be non-tuberculous. These are a few out of a series of 50 cases taken haphazard; the reaction in some cases has commenced as soon as from five to seven hours after the drop of tuberculin was instilled into the eye, but in the majority of cases the onset of redness was delayed until the sixteenth to twentieth hour; in one case the eye was inflamed for more than a week.

I am, Sirs, yours faithfully,

Lincoln, Dec. 4th, 1907. STANLEY GREEN.

PULMONARY REGURGITATION.

To the Editors of THE LANCET.

SIRS,—It would add a fresh terror to recording clinical experiences were we expected to refer to all previous work on the same lines. It is therefore without any sense of surprise that I find Professor T. Oliver, among the references he makes to the literature of the subject on which he treats in THE LANCET of Dec. 7th, does not mention my own published experience of pulmonary valvular disease. Indeed, I should not draw attention to it now were it not that I covered much of the ground he has traversed from a diagnostic point of view, and my case, like his, presented some features of especial interest at present to which I shall refer immediately.

In 1879–80 I published in the *Edinburgh Medical Journal* a paper on dextral valvular disease of the heart in which an accurate drawing of a well-marked case of ulcerative endocarditis involving the pulmonary valves will be found, together with a collection of cases at that time conveniently accessible and in which I discussed the mechanics of the whole matter rather fully. The more important reason for which I refer to the subject now is that Professor Oliver's case, like my own, exhibited a point of considerable physiological interest to us at the present moment. I refer to the fact that the septum of the heart in his case was ploughed up by an aneurysm which opened into the right ventricle "almost immediately under the valves of the pulmonary artery." Notwithstanding this there seems to have been no marked dissociation of the regular sequence of auricular and ventricular contraction.

In my case the ulcerative process had destroyed what we now regard as the point of transit of the "bundle of His" from the right into the left ventricle but without disordering the normal cardiac rhythm. I hope the heart of Professor Oliver's case has been preserved and that some expert anatomist, like Professor A. Keith, may have an opportunity of determining the condition of the A.V. bundle, of which we have heard and learned a good deal of late. My own specimen, which I presented to the museum of the Royal College of Physicians in Edinburgh, has, I fear, been lost. Like Professor Oliver's, my case, moreover, also evinced cardiac pain and in mine the radiation of the pain was very distinctly down the right arm, a point of interest in the circumstances, it will be conceded, as throwing some light on the essentially and necessarily neural cause of the *pain* in angina pectoris.—I am, Sirs, yours faithfully,

ALEXANDER MORISON.

Upper Berkeley-street, W., Dec. 7th, 1907.

THE REFORM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editors of THE LANCET.

SIRS,—I am glad to see Mr. Samuel Knaggs's temperate contribution to the discussion of this question, although I am one of those who "think differently" from him. He uses one of the most principal arguments placed before the Lord President by the College Council—viz., that the best Members would not stand in case of an election and that the seats would be taken by "plausible agitators." As one of the latter I would say that our opinion is exactly to the contrary. We are convinced that the best Members *would* come forward, if they were sure of a welcome by the Council. Moreover, I, and no doubt any others objected to, would be perfectly willing to stand aside and to allow others to reap where we have sown, if this would in any way facilitate the reform. It is no secret that the main objection on the part of the Council is a personal one and this can be very easily removed in the above manner. The best Fellows have always come forward for election, why should not the best Members do so?—I am, Sirs, yours faithfully,

Putney, Dec. 8th, 1907. W. G. DICKINSON.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

To the Editors of THE LANCET.

SIRS,—As a member of the public health service I have, of course, read your leading article of Nov. 30th and the memorandum of the Board of Education with the greatest interest. The former is a scorpion, inasmuch as the sting lies in the tail or last sentence. I suppose this was added to balance the expression "a well-conceived pronouncement" at the beginning of your last paragraph. However, your attitude is a refreshing contrast to that of one of your contemporaries. At the beginning of your article you state, "Upon him (i.e., the medical officer of health) will devolve the local organisation of such assistants as he deems necessary," and towards the end, "the placing of the work of medical inspection entirely sets aside the discretion of the education authority in the matter of appointments." I cannot find anything in the memorandum to justify these statements of THE LANCET; I wish I could. I agree that as the medical officer of health has to supervise the work of any assistants he may have he should have at least a voice in their selection. It is a pity that on page 6 of the memorandum it is not made clear who shall be the judge of whether "the work is obviously more than he can undertake unaided."—I am, Sirs, yours faithfully,

Dec. 3rd, 1907. A NORTH LONDON M.O.H.

THE TREATMENT OF CHRONIC PROGRESSIVE DEAFNESS BY OPERATION.

To the Editors of THE LANCET.

SIRS,—I am sorry that Dr. W. Milligan's further experience has led him to take a less hopeful view of operation for the relief of chronic progressive deafness, for in 1904 "he had seen results that had not been obtained by a previous trial of other methods." As for his criticism, I really think most people would admit that the cases I reported in your issue of Nov. 23rd were given with sufficient account of the state of the hearing before and after treatment. I have not made any "pronouncement." I said: "I still think there is some hope that we may yet do more than has yet been achieved for the relief of extreme cases." With due respect to otological theory, it may yet be said that Cases 1 and 4, which had been pronounced hopeless by well-known men, show considerable improvement in hearing three years after operation. It is hardly fair to suggest that my views are opposed by all otologists, as this is not the case. The only otologist who has taken the trouble to see my methods for himself has adopted them, and I have recently heard from more than one instrument-maker who had had orders for the instruments used by me.

I am, Sirs, yours faithfully,

Dec. 4th, 1907. F. FAULDER WHITE.

ROYAL MICROSCOPICAL SOCIETY.—At the Royal Microscopical Society on Nov. 20th the secretary read for Mr. E. M. Nelson, a short paper on the François Watkins Microscope. The metal-work of this microscope, and even the fittings of the box in which it is contained, being entirely of silver it is hall-marked and consequently its date is known to be in the years 1754–55. This microscope is one of the earliest in which the body, the stage, and the mirror are all carried on a rod which can be inclined at any angle owing to its being hinged to a tripod foot. George Adams had, however, used a similar construction at an even earlier date. Mr. J. W. Gordon delivered a short address on Mercury Globules as Test Objects for the Microscope, in illustration of a paper by him already circulated among the members of the society. He said that when a minute globule of mercury was seen under a wide-angle object glass as a dark object in a bright field, it was surrounded by a narrow band of light, which was reflected from the under surface of the globule. This phenomenon was not without interest for bacteriologists, because bacteria had highly reflecting surfaces, and it was possible that in some of them the appearance referred to had been assumed to indicate the existence of a sheath or capsule. This visibility of the light reflected from the under surface of an opaque body was illustrated by a mercury globule $\frac{1}{100}$th of an inch in diameter mounted in balsam and seen with a one-sixth inch object glass and a quarter-inch condenser. The upper surface of the globule could also be illuminated with light reflected down from the surfaces of the various lenses composing the object glass. The reflections of these surfaces proceeding upwards from the globule could be seen by the observer, and any displacement of an image due to tilting of a lens was immediately perceptible. Mr. Gordon further explained in much detail the manner in which by the use of a mercury globule the body of the microscope, the sub-stage fittings, and the light could be brought into accurate alignment. With one of the microscopes which was on view it was possible for an observer under favourable conditions to see the reflection of his own cornea. One of the microscope fields was completely occupied by an opaque body—namely, a piece of etched tin-foil which was well illuminated by light reflected from the object glass. In the discussion an objection was raised to the use of the mercury globule as a test of the resolving power of a microscope, on the ground that for a resolution test at least two objects in the field were indispensable. A telescope, for instance, was tested on a double star and never on a single one. Mr. Gordon, in his reply, said that the criticism was only applicable to the case of a bright object seen on a dark background and not to his use of a mercury globule as a dark object seen on a bright background. Mr. E. Moffat read a paper on Light Filters for Photomicrography and showed an apparatus for the rapid filtration of agar solution under atmospheric pressure. The necessary exhaustion in the receiver was obtained with a bicycle pump, the action of which was reversed.

THE HOUSING PROBLEM AT HAMBURG.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

PART II.

(*Concluded from p. 1646.*)

DESCRIBING the districts that suffered most from cholera I spoke of the streets off the Schaarmarkt, which now exist no more, and of another quarter which remains to-day what it was at the time of the great epidemic. In 1894 I wrote:

> Crossing over to another part of the town I found, giving off the broad and straight Steinstrasse and Niederstrasse, many courts and alleys where there had also been a great number of deaths from cholera. The entrance to one of these courts was just 66 centimetres wide, but as the walls on either side bulged out here and there it would be no easy matter for a stout man to get through. In this court persons can step out of their windows into the houses opposite. Its entrance is at No. 22 Steinstrasse, and it is certainly the darkest, the most gruesome court I have seen in Hamburg. On the other side of the street there are wider courts, where, nevertheless, an enormous number of deaths occurred; but everywhere there are inevitable swarms of children, overcrowded rooms, poverty and misery, relieved at times by remarkable cleanliness, which constitutes a gratifying surprise in the midst of such squalor. The town of Hamburg will have a hard task to accomplish in clearing away all these rookeries; but by far the worst feature is that there does not seem to be any genuine desire to take this grievance in hand.[1]

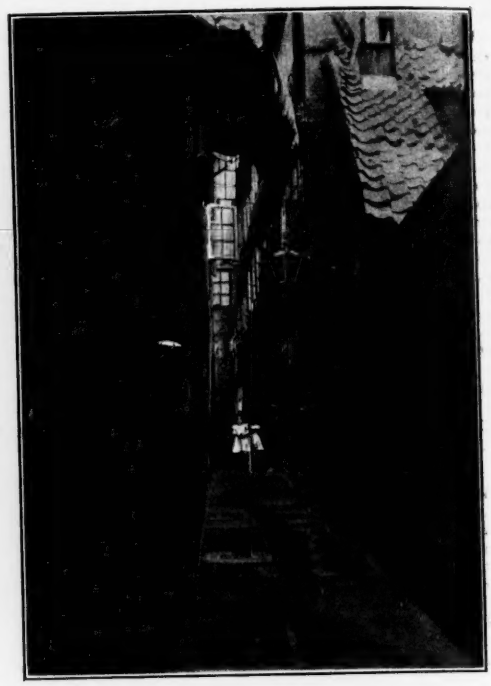
Thirteen years have elapsed since these lines were written and the criticism contained in the last few words has been amply justified. Indeed, the courts off Steinstrasse, and especially No. 22, remain intact. The other day I went there again and had the advantage of being accompanied by M. Augustin Rey whose very practical communications on the building of sanitary dwellings were much noticed at the Berlin International Congress of Hygiene. M. Rey being an architect who has made a special study of the housing of the poor, his company was particularly welcome and now I have to thank him for the very accurate plans that he has drawn of the places which we visited together. Our first visit was to the court at No. 22. To reach this court it is necessary to pass under a house that gives on to the Steinstrasse (see map on page 1644 of THE LANCET of Dec. 7th, 1907). This passage is about 14 metres long and only an inch or so more than two feet broad. It is like a gallery in a coal mine rather than the approach to human dwellings. On emerging from this passage into the court a little light and a little air are obtained on the right-hand side because, most fortunately, one house happens to be missing. Outbuildings occupy a part of the space left vacant and there is a high wall, but there are no upper floors. This is shown on the right of the illustration of the court viewed from the entrance (Fig. 6). To the left facing this opening the inhabitants have hung some of their bedding out to air from the window. The narrowness of the court beyond can be seen. At its widest part it is only 1·50 metres, or a little less than 5 feet, and the average (1·20 metres) is under 4 feet (Fig. 9). The window frames facing each other almost touch when they are opened. The other photograph I took from within the court looking towards the entrance. The narrow passage from the street is to the right of the illustration (Fig. 5) and a member of the Congress who had come from Denmark was standing there taking a sketch. Immediately on entering from the street there are six closets in a row (Fig. 10). Questioning some of the inhabitants we were told that 30 families live in this court, or about 400 persons. This, however, is but an estimate given by a very intelligent inhabitant with whom we made acquaintance and not a precise official calculation. The tenements consisted for the most part of two small rooms and the rent was 3 50 marks, or 3*s.* 6*d.* per week. The fathers of the large families who live here—for the court teemed with children—earn from 10*s.* to 12*s.* a week on an average. They work for the most part at the docks and the coal wharves. It will be seen, therefore, that at Hamburg, as in London, rent absorbs rather more than a quarter of the income. In such circumstances, unless the lower grades of labour are paid higher wages or have more constant employment, it is impossible to obtain from this class enough to pay the rent of a really sanitary family dwelling. It should further be noted that there is no water in the houses. It has to be fetched from the tap which is situated close to the six closets and just by the gully

[1] See THE LANCET, July 7th, 1894, p. 49.

FIG. 5.

Hamburg. Court running back under 22, Steinstrasse, looking towards the entrance.

FIG. 6.

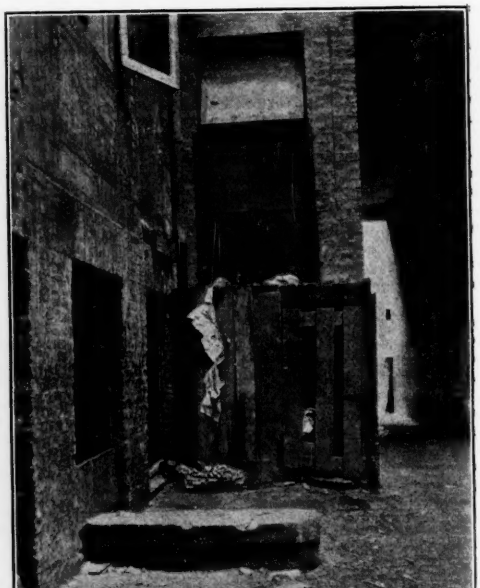


Same court as shown in Fig. 5 but viewed from the entrance.

FIG. 7.

Court running back from 36, Steinstrasse.

FIG. 8.



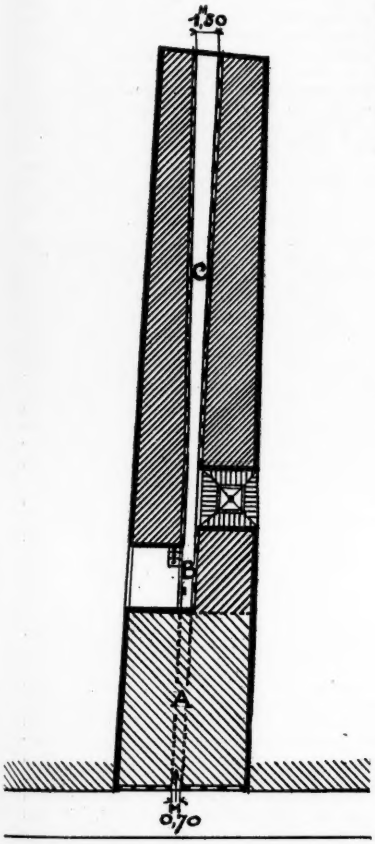
68, Steinstrasse: the dust-bin.

into which slops are emptied. This dangerous promiscuity is very general in these courts.

A few steps further on, at No. 36 Steinstrasse, there is another court where the same thing exists. The passage from the street is a trifle wider—namely, 80 centimetres—and not quite so long—13 metres 50 centimetres (Fig. 11). Also the court itself is wider—from 2 metres to 2·80 metres, so there are more light and air and it looks better but some of the details are worse. Thus, on entering, to the right there are two terrible compartments, rooms of the ground floor of the first house. The smaller room is barely bigger than a large cupboard; it serves to store all the house refuse of the entire court and the accumulation therein is piled up to the ceiling. The larger room is surrounded on the three sides by closets built one against the other and only separated by planks of plain unpainted or unvarnished wood. The place is damp and very dark. The light only penetrates by two small openings above the door. Across the ceiling there are rafters that are rotting and where cobwebs and dust accumulate. The only ventilation for these numerous closets is from the door, which measures two feet by six feet. It is a most noisome place and contains in all ten closets packed close together in this small, dark room. In those circumstances I was not surprised to find some soil outside in the court itself and this was the more deplorable as there were children playing about. Then just opposite this abominable collection of closets is the tap that supplies the drinking water, together with the gully that receives all the slop water and communicates with the public sewer.

The court itself was wider and on one side the houses were not so high but the pavement was inferior and would not prevent the contamination of the subsoil. The court was about 70 metres in length and I took a photograph of it to show how carefully the inhabitants had opened nearly all their windows (Fig. 7). It was the month of October and though the weather was not cold it was not the sort of weather that would lead people to throw their windows open on account of the heat. The windows were evidently opened as a sanitary precaution.

FIG. 9.



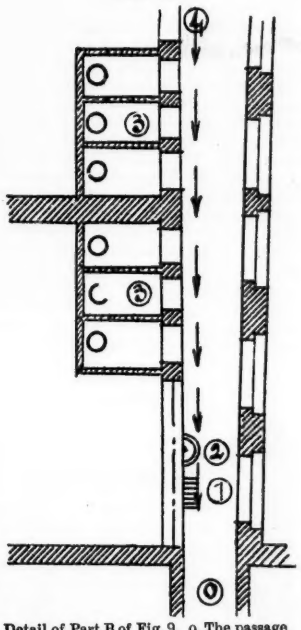
STEINSTRASSE - N°22

METRE 0 1 5 10 15

FEET 0 15 30 45

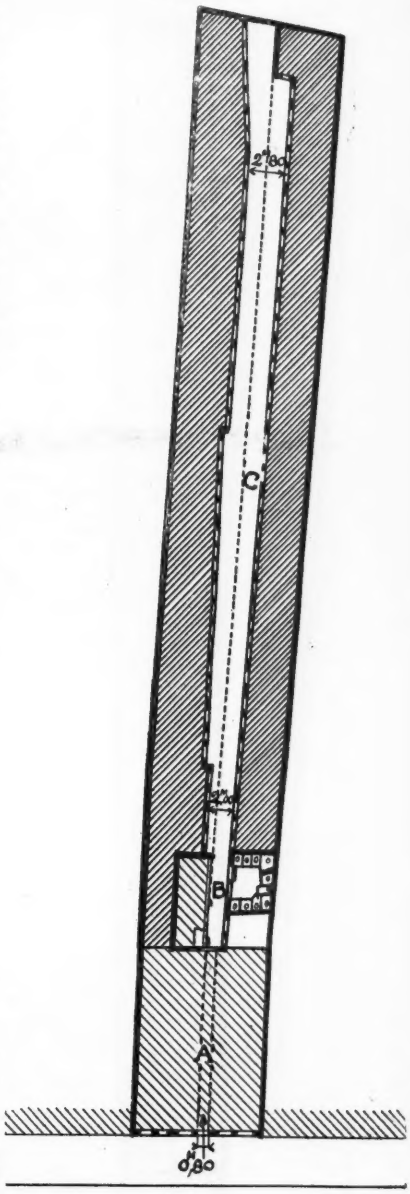
A, Passage from the street to the court about 0·70 metre wide and 14 metres long. This passage cuts through the house giving on to the Steinstrasse. B, The spot where the six water-closets, the sewer mouth or gully, and the drinking water tap are placed side by side (for detail see Fig 10). C The court, which is the only air and light inlet for the dwellings on either side. It is about 42 metres in length and the average width is 1·20 metres.

FIG. 10.



Detail of Part B of Fig. 9. 0, The passage from the street. 1, The gully grating for slop water. 2, The tap supplying drinking water to the court. 3, Six closets for the inhabitants of the court. 4, Gutter flowing towards the gully.

FIG. 11.



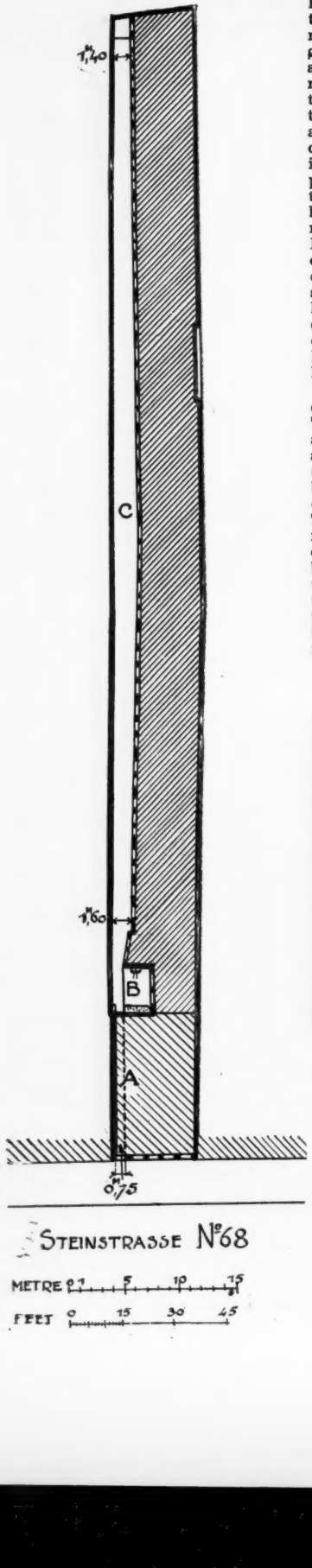
STEINSTRASSE N°36

METRE 0 1 5 10 15

FEET 0 15 30 45

A, Passage from the street about 80 centimetres wide and 13·50 metres long; it goes through the house that gives on to the street. B. Here are 10 water-closets in a small, dark, damp room lighted by one little window. The water-closets are like little cupboards with neither light nor air. Opposite are the gully leading to the sewer and the tap supplying the drinking water. The cinders and household refuse are kept in the smaller vacant room by the side of the closets. C, The interior of the court with houses on both sides. The court is about 70 metres in length and the average width is 2·40 metres.

FIG. 12.



Indeed, throughout it was pathetically evident that whilst these poor people have been neglected during so many years and nothing is done to save them from the danger created by such habitations they were themselves making a hard struggle for existence. On them at least the lessons of the great cholera epidemic have not been lost. They have learnt that cleanliness and plenty of air were the best of preventives. My photographs testify by the numbers of windows that are open how these poor people are striving to make the most of what little air is able to penetrate the narrow courts in which they are compelled to dwell. As for cleanliness, the best evidence was the appearance of the children. Some looked poor and pinched and anæmic but out of some hundred or more children whom we saw and carefully observed in these courts not one was untidy or dirty. Their clothes might be made of poor materials, they might be patched or darned, but not in one instance were they torn or disorderly. As for the little girls, it was simply beautiful to note how carefully their hair had been combed, brushed, and dressed, and clustered round their clean and well-washed faces. Yet these were the slum children of Hamburg, bred and born in those very slums, unaltered and even still more overcrowded, where the inhabitants had been decimated by the terrible cholera epidemic of 1892. M. Rey, like myself, was deeply impressed and he kept saying, "See, see, what a brave fight they are making for existence even here, where everything is against them." If in spite of the continued existence of such slums and of the neglect of the interest of the poor, the death-rate of Hamburg is falling and there has not been another great epidemic, the honour is due to the Hamburg housewife. By keeping her children clean she has proved herself the most practical of all the sanitary reformers.

The next court that we visited was at No. 68. This was an exceptionally long court, about 90 metres, but only on an average 1·50 metres wide (Fig. 12). The entrance passage from the street was only 75 centimetres wide and it was about 12 metres long. On emerging from this passage to the right there was a slight widening, making a little yard that measures about 10 feet by 6 feet (Fig. 13). Here at one end was the water tap and at the other end the dust bin. The latter seemed to illustrate so graphically the neglect of these poor quarters that I took a photograph of this most insanitary contrivance (Fig. 8). The difficulty, especially from the financial point of view, of clearing and rebuilding insanitary areas is admittedly great. But there should be no difficulty in compelling landlords or householders to provide sanitary dust-bins. Here instead of a metallic or cemented dust-bin properly closed over were a few planks roughly nailed together. Even then, the planks were not numerous enough to cover the whole surface so that there was room between for scraps to fall out and for dust and ashes to be blown from their receptacles into the court and dwellings. And what were these receptacles? Certainly not specially constructed *boites à pourbelle*, but old wrecked tin pails or tubs, little cardboard or wooden boxes and even paper bags. This dust-bin was about 4 feet high, 2½ feet deep, and 5 feet broad. It did not suffice to contain all the refuse brought from the houses in the court. On the top there were dirty rags and paper, bits of stale bread, and food. On the ground there were potato peelings and other garbage which was blown about by the wind, some of the dust falling into the jugs and pails with which the people came to get their supply of drinking water from the tap situated just opposite and within a few feet of this dust-bin. Also and equally near is the gully that leads to the sewer. It was half choked with cinders and paper from the dust-bin. A brick gutter runs along the whole length of this court and in it slop water is emptied, and between the bricks with which the gutter is made a part of this water passes into and contaminates the subsoil. Needless to say that slop water ought not to be poured out in a gutter running under the windows of a narrow court but should be conducted by properly constructed and ventilated house drains directly to the sewer. Nor should there be gully-traps and dust-bins and other sources of dirt and dust close to the place where the pails and jugs are brought to fetch the supply of drinking water. The people who live in such courts have to make use of many unsuitable things, such as open tin pails, to fetch their water and there is a danger that the water may be contaminated after it leaves the tap and before it is drunk. But it is hardly necessary to say more about these courts, the plans and photographic reproductions speak for themselves. Considering how much this district suffered from the cholera epidemic, it is not creditable to the town of Hamburg

FIG. 13.

Detail of Part B of Fig. 12. 1, The passage from the street. 2, The gully to the sewer. 3, The dust-bin. 4, The tap for the supply of drinking water. 5, The gutter conveying slop water to the gully.

Description of Fig. 12.

A court running beneath Steinstrasse No. 68. A, Passage from the street; width about 0·75 metre, length about 12 metres. B, Place where the overflowing dust-bin stands opposite the water tap and by the side of the gully. The dust-bin is made of wood or cardb ard. For detail see Fig. 13. C, The court which supplies the dwellings with light and air. Average width 1·50 metres; length about 90 metres.

that all these years should have passed and that nothing has been done beyond discussion and the drawing up of schemes. There is a big scheme now to cut new and broad thoroughfares through the insanitary area behind the Steinstrasse. But the poor people who live here will not find lodgings in a big street with its luxurious shops, though doubtless such thoroughfares afford a lucrative field for building speculations. It is to be hoped, however, that the signal failure of the scheme dealing with the Schaarmarkt district, which far from solving has aggravated the housing problem, will not be repeated in regard to the insanitary areas near the Steinstrasse. From what I was able to see and to hear it does appear as if the authorities now governing the town of Hamburg are anxious not to repeat these past errors and do seem disposed to profit by the lessons of experience. Consequently, I hope to have an opportunity on a future occasion of recording that some useful step has been taken at Hamburg towards solving the great housing problem.

THE CONGRESS OF THE GERMAN UROLOGICAL SOCIETY.

(FROM OUR VIENNA CORRESPONDENT.)

(Concluded from page 1424.)

IN the discussion following the papers on Hypertrophy of the Prostate Bottini's operation was not considered as satisfactory as the modern methods which allowed not only the removal of the entire diseased organ without any danger to the bladder or rectum but also give a better result as regards prognosis. Professor ZUCKERKANDL (Vienna) and Dr FRISCH gave a summary of their results, which showed that at present the mortality amongst 460 cases was no more than from 2 to 3 per cent.

Albuminuria formed the subject of another series of communications which were read by many well-known observers, including Professor von Noorden and Dr. Posner. Professor VON NOORDEN, whose paper evoked much interest, discussed the condition known as "harmless albuminuria," which did not denote serious derangement of the kidneys. He distinguished six different causes or states which might lead to the presence of albumin in the urine and he accordingly enumerated six kinds of albuminuria—namely, the postural (*orthotisch*, occurring in persons of poor physique after considerable exertion), the juvenile (found during puberty and indicative of the important changes taking place in the organism at that time), the postnephritic, the pre-tuberculous, the diabetic, and the senile. He cautioned practitioners against combating these types with all the armamentarium used against acute nephritis, for this would mean a deviation from the guiding principle of the physician, *primum non nocere*.

Dr. POSNER in his paper discussed the question of unilateral albuminuria. He said that he had often found that after handling one kidney, as, for instance, in operations or in bimanual explorations, or after pelvic catheterisation, albumin appeared in the urine secreted by it. His experience led him to make a sharp distinction between albuminuria, nephritis, and Bright's disease. Albuminuria might appear without either of the other two conditions being present; it might be of toxic origin and it might be caused by mechanical injury. On the other hand, Bright's disease was an interstitial condition and occurred without any nephritis having been present previously. Nephritis, again, might come on and pass off readily, with renal casts and with or without albumin and there might eventually be complete recovery.

Anuria formed the subject of a few papers. One of them was by Dr. FRANKEL HOCHWART who dealt with disturbances of the function of the bladder during adolescence. He had had an opportunity of examining the spinal cord of two youths, aged 17 years, whom he had also examined during life, when only trabeculæ of the bladder wall and hydronephrosis were observed. The spinal cord showed axonal degeneration in the second, third, and fourth sacral segments and dilatation of the canal. The coincidence of this observation with those made by others seemed to prove that the spinal centre for the bladder has been found.

Dr. CASPER, Dr. KÜMMELL, and Dr. POSNER also communicated papers on various questions connected with anuria.

Papers were read by Dr. LENK on Uræmia, by Dr. HOLZKNECHT and Dr. KIENBÖCK on Nephrolithiasis and its Diagnosis by Means of the X Rays, and by Dr. POSNER on the Cytology of Pus. It was interesting to see in the x ray plates shown by the radiologists how clearly a calculus in the kidney might be localised, in favourable circumstances, by two trans-illuminations, of which one was sagittal and one was frontal. The introduction of a ureteral bougie casting a shadow with the rays enabled calculi to be distinguished from calcified glands or patches of atheromatous vessels in contact with the kidney. Numerous demonstrations of pathological specimens, together with a number of special instruments and photographs, concluded the proceedings. The formation of an international urological association received a decided impetus from the meeting of the German Urological Society, and there is every reason to suppose that many members of one society will also join the other.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

A Valuable Gift to the University.

SEVEN years ago Lord Calthorpe gave to the University 27½ acres of land at Bournbrook upon which the new buildings of the university devoted to applied sciences have been and are being erected. Lord Calthorpe has now supplemented his first great gift of land by a second gift of 19 acres, situated between the new buildings and the Bristol-road. This second piece of land is given for the purpose of providing recreation grounds, and thus a long-felt want is to be satisfied in a most acceptable manner. The gift is doubly welcome, for it not only solves a difficulty but it assures open access from the University to the nearest main road and dismisses the possibility of the University being shut in on the Bristol-road side by manufacturing premises or private houses. There can be no doubt that the possession of grounds in the immediate vicinity of the University buildings will greatly stimulate the athletic life of the University and will increase the physical and mental capacities of its students.

Proposed Public Medical Service.

The question of the establishment of a public medical service in Birmingham has been under consideration for a long period. Both the central division of the British Medical Association and the Birmingham and District General Medical Practitioners' Union have discussed the subject and both bodies concluded that such a service was desirable and they were both of the opinion that the service should be under the control of a central committee. It was decided that the central committee should consist of representatives of the local divisions of the British Medical Association, representatives of the Birmingham and District General Medical Practitioners' Union, representatives of the medical staff of each branch of the public medical service, and medical representatives of the local hospitals willing to coöperate, but the last-named members were not to exceed five in number. The two first bodies elected their representatives and the committee thus constituted recognised that as it was incomplete it had no power to establish a public medical service and it decided that a public meeting of the local members of the profession must be called. It also decided to invite medical representatives of the hospitals to join the committee and with their collaboration to formulate a complete scheme. Acting upon the decision a series of laws were formulated and these were adopted by a majority of the committee at a meeting held on Oct. 1st last. The minority, having received permission, also prepared a report which differed from that of the majority only in that it dissented from a clause which fixed the weekly rate of pay of the patients who joined the service at 2*d*. In expressing dissent the minority report pointed out that the General Medical Practitioners' Union had itself adopted 1*d*. a week as a minimum and the members of the Union feared that, in the circumstances, an attempt to increase the rate would lead to failure. A general meeting called to consider the proposal on Nov. 19th was found not to be sufficiently representative, therefore further notices were issued and a meeting was held at the Medical Institute on Dec. 4th, at which about one hundred practitioners from Birmingham and the surrounding district were

present. At that meeting it was proposed that the establishment of a public medical service was desirable. In the discussion which followed there were three most prominent features. First, the expression of great dissatisfaction with the conduct of the dispensary and the out-patient departments of the local charities; secondly, resentment against some of the details of management of the Hospital Saturday Fund and the idea fostered in the minds of the workmen who subscribed to the fund that by their subscriptions they were entitled to the services of the hospitals so converting them practically into penny clubs; thirdly, the feeling of fear that a public medical service established on a basis of a weekly subscription of 2*d.* would not attract the class of patient desired as they were already well provided for and would probably only enroll those who were at present private patients. When the vote was taken it was found that the feeling of the meeting was overwhelmingly against the proposal to establish a public medical service and the motion was lost by a majority of about 33 out of a total vote of about 87.

Children's Teeth.

The report presented at the annual meeting of the governors of the Birmingham Dental Hospital contains, in addition to the statement of the number of patients and number of operations, some interesting information concerning the results of the examination of the teeth of the children attending some of the elementary schools which has been carried out during the past year by the aid of money provided by an anonymous donor. During the year 2733 children were examined and the teeth of 96 per cent. required treatment. If the proportion is the same throughout the city we are brought face to face with the fact that only 4 per cent. of the children attending the elementary schools have normal healthy teeth. If this is so and if the state of affairs is to be remedied it means a very large annual expenditure, and if things are to remain as they are then faulty digestion will continue to be responsible for unhealthy children and adults in spite of the improvement of other conditions.

The Maternity Hospital.

As I pointed out in a previous letter, the funds of the Maternity Hospital are insufficient for the needs of the institution, and money must be obtained if the work is to be carried on. In these circumstances it has been decided that a ball shall be held in the Grosvenor Rooms of the Grand Hotel on Jan. 2nd, the object being to obtain funds sufficient to meet the working expenses for some months. That the ball will be a success is practically certain, for it is to be held under the presidency of the Lord-Lieutenant of Warwickshire and the Marchioness of Hertford who will have the support of a large number of distinguished patrons.

Dec. 10th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Infirmary Site.

WHILE the new infirmary in Oxford-road is rapidly approaching completion controversy still goes on as to the future of the Piccadilly site. The report of the architect is on the whole adverse to the conversion of the present building to the purpose of an art gallery and a free library. As regards the well-being of the city from the sanitary point of view, the best thing would be to preserve it as an open space. The days are now passed by, and almost forgotten, when the infirmary garden was a favourite resort for the dwellers in Mosley-street, at that time a "genteel street" of good substantial houses and free from the invasion of shops, offices, and warehouses. And in these later days the five acres of land judiciously planted and cared for would be a restful oasis, the presence of which in the busy, bustling life of such a city as Manchester would be of untold value. The idea is not Utopian, for with the increased realisation of the baneful, wasteful extravagance of the present mode of dealing with fuel we may confidently look forward to being freed from our dismal leaden pall and to a time when it will not be a novelty to see bright skies and a sunny day. It is said to be too costly a site to be left unoccupied, but it would cost a good deal less to keep it as a lung for Manchester than to spend another £400,000 or more in addition to the £400,000 which the site cost.

St. John Ambulance Association.

Interest is still kept up in Manchester as a centre of the St. John Ambulance Association and a meeting of the centre was held the other day under the presidency of Surgeon-Major G. H Darwin who has long been an earnest worker for its welfare. The report showed that 27 classes had been held during the year, 11 of them being under the management of the technical and other schools of the district. Four of them were composed of members of the Manchester city police, four were in connexion with the Manchester and Salford corporation employees, three were connected with clubs for mutual improvement, one consisted of members of the Manchester and Salford corps, and besides these were four not classified. Moreover, during the year 358 certified members were re-examined, 179 passing for vouchers, 108 for medallions, and 55 for labels. Since the formation of the centre in 1880 the total number of the certificates issued for first aid and nursing now exceeds 11,450. The good influence of this movement must be far greater than the mere figures would indicate. Numerous small accidents occur in which the knowledge and aptitude of the certificate holders come into play without any record, and all of them serve more or less as diffusers of knowledge which by the training they have received is at once put to practical uses.

Protection of Infant Life.

An interesting philanthropic experiment has been tried at Blackburn by the Christian Social Union of that town. A good wholesome dinner was given to 12 poor women with infant children and it was found after eight months' trial to have been followed by "extremely gratifying results," the mothers being able to suckle their babies who have "thriven splendidly." Bishop Thornton suggested that the scheme should be continued on a larger scale and that the municipality ought to subsidise it. It is easy to understand the physical benefit to the children, but at what cost to the spirit of independence of the mothers? The daily good, wholesome dinner to the wives must be a great relief to the husbands and enable them to contribute more to the £3,000,000 which, according to Mr. John Burns, is spent weekly in drink. All this illustrates the difficulty of combining charitable work with strengthening instead of undermining the foundations of character.

The late Dr. Adolphe Wahltuch.

By the death of Dr. Wahltuch Manchester loses the familar presence of an amiable, active-minded member of our profession. An obituary notice of the deceased was published in THE LANCET of Dec. 7th, but I may mention that notwithstanding his devotion to his profession he was an enthusiastic lover of the game of chess. As a notice in the chess column of the *Manchester Guardian* puts it, "he was one of the most popular and enthusiastic as well as the oldest member of the Manchester chess community." He founded the South Manche-ter Chess Society in 1882 and had been president and vice-president of the Ardwick and Manchester Chess Clubs, and was also a vice-president of the Manchester Chess Association.

The Unpopularity of Sanatoriums.

Some short time ago there was a scheme for establishing a sanatorium for consumption at Romiley, near Stockport. Oakwood Hall, some distance from the village, which it was proposed to convert to that purpose, was in many respects eligible, but the objection to the scheme by the residents in the neighbourhood was so strong that it was not carried out. It is quite evident that unless care is taken convalescent homes or sanatoriums for consumption may do much to destroy the comfort of the residents in the neighbourhood. It is said that the great institutions, telling as they do of the philanthropy of cities and individuals of Manchester and Liverpool, do not add to the amenities of the Delamere district. With regard to Romiley there is a marked inconsistency in the attitude of the people. They were in arms against the sanatorium, but allow apparently this place, marked by much natural beauty, to be spoiled by the smoke from the mills which are too numerous to serve as improvers of the landscape, It seems that some nuisances are to be preferred to others.

Irish Medical Schools' and Graduates' Association.

Perhaps one of the most agreeable forms which nationality and comradeship can assume is by schools' or graduates' associations. Those, therefore, who cannot boast of these links with each other and with Ireland may cordially welcome the formation of a northern branch of the rish

Medical Schools' and Graduates' Association, to include Manchester, Liverpool, Leeds, Sheffield, and other places in their neighbourhood. The council of the association has undertaken the task of working out the details.

Hospital Sunday.

A meeting of the supporters of the Hospital Sunday Fund was held on Dec. 2nd in the town hall, the Lord Mayor presiding. The amount raised at the close of the year ending June was £3,434, compared with £3,633 in 1906, a decrease of £199. Appreciation was expressed of the way in which the Saturday and Convalescent Homes Fund had acted towards the medical charities at the last distribution. Although there was the responsibility of maintaining the two homes provided by means of the bazaar of November, 1905, their contribution was not lessened. It is evident that there is a confident feeling that the work-people of the district will raise sufficient to defray the cost of the convalescent homes. But it was regretted, as well it might be, that the efforts made to collect subscriptions from those who derive income from Manchester but live at a distance "had not been very satisfactory." The Lord Mayor, in commending the cause, "deplored the continuous decrease in the receipts." Is it that rates, taxes, motor-cars, and other things are drying up the springs of charity, or that the springs are fewer and less bountiful, and are diverted in these days of luxury and extravagance in other directions than that of charity?

Dec. 10th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The Sanitary Condition of Cardiganshire.

AT the last meeting of the county council of Cardigan reference was made to reports which had been made by inspectors of the Local Government Board upon the urban districts of Newquay and Aberayron and the rural districts of Aberayron and Tregaron and one member of the council said that if there had been any remissness in carrying out the Public Health Acts it was on the part of the Local Government Board. His only reason for making this statement appears to have been the alleged delay in issuing the reports after inspections had been made of the districts concerned. In the case of Tregaron there is certainly no ground for this charge, for Dr. E. P. Manby first visited the district on July 15th last and his report was dated Oct. 14th. The condition of the cottages in the district was described by Dr. Manby as being far from satisfactory. The floors were of bare earth, the walls were damp, and the rooms were insufficiently lighted and ventilated. In many instances there was no through ventilation and numerous houses were built with "back to earth." A commentary upon this report is to be found in the account of the last meeting of the rural district council, when a case of diphtheria was reported in a house in the parlour of which, measuring 440 cubic feet, seven persons slept.

Cardiff Workhouse.

Mr. A. B. Timms has been elected by the Cardiff board of guardians as visiting medical officer to the Cardiff workhouse. Mr. Timms was for several years resident medical officer and succeeds the late Dr. Alfred Sheen.

Housing at Merthyr Tydfil.

The newly formed corporation of Merthyr Tydfil is actively continuing the policy of the urban district council in preventing the occupation of uninhabitable houses and is at the same time providing habitable dwellings for those persons who are displaced. At a recent meeting of the health committee the medical officer of health (Dr. A. Duncan) reported upon nearly 50 cottages as being unfit for human habitation. It was stated that for the last 38 of the council's houses which were to let there were no less than 200 applicants. Some difficulty is being found in preventing the occupiers taking in more lodgers than is desirable. The first 100 houses that were built by the council had only three bedrooms and it has now been decided that the number of persons in each house (including lodgers) shall be limited to six.

Spectacles for Children in Elementary Schools.

When the Pontypridd education committee appointed the medical officer of health (Mr. Howard Davies) to be also medical officer to the committee he began to make systematic examinations of the children attending the public elementary schools. After making a preliminary examination of their eyes he sent those with defective vision to a specialist who was paid by the committee. Upon the recommendation of the medical officer the committee provided spectacles in those cases that required them. A sum of £25 thus expended was surcharged by the auditor but upon the committee appealing against the surcharge to the Local Government Board the expenditure has been sanctioned. When communicating with the Board on the subject the committee pointed out that it was unreasonable to compel children to attend school when they were unable to carry on their studies owing to defective eyesight.

The Salary of Poor-law Medical Officers.

At the meeting of the Bridgend (Glamorganshire) board of guardians held last week Mr. W. Randall, a district medical officer, who had recently been granted an increase of salary, sent the following letter to the guardians which was read without any comment:—

I presume I must thank the board for the totally inadequate increase of salary allowed me. Your board's absolute ignorance of the remuneration due to a professional man would be ludicrous if it were not cruel. For several years the board paid the barber who cut hair and shaved once a week at the workhouse more per annum than the medical officer who visited three times weekly, not counting emergency calls and clerical duties.

Dec. 10th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Complimentary Dinner to Dr. Alexander James.

ON Thursday evening, Dec. 5th, Dr. James was entertained to dinner in the Caledonian Railway Hotel, Edinburgh, by a number of his colleagues and friends. Dr. James completed his term of office as a physician to the Royal Infirmary in August last and it was felt by his friends to be a suitable time to express in this way their appreciation of his many excellent qualities and their personal esteem and affection for him. The company, which numbered about 60, was presided over by Dr. C. E. Underhill, the President of the Royal College of Physicians of Edinburgh. The toast of the evening was proposed by Dr. J. J. Graham Brown, who had been associated with Dr. James as assistant physician in the infirmary, so it could not have been in more suitable hands. Dr. James replied in his usual felicitous manner. Even those who could not be present at the dinner felt that it was a most suitable expression of the sentiments entertained towards Dr. James by the profession in Edinburgh.

Mental Wards in the Edinburgh Royal Infirmary.

The agitation for the addition of mental wards to the Edinburgh Royal Infirmary has been lately revived by an appeal in the daily newspaper press. Everyone would be glad to see a hospital established for the reception of acute and incipient mental disorder where it was not necessary to have the patient certified, but that the infirmary should be enlarged for this purpose is not regarded with universal favour. There are other urgent claims upon the infirmary which cannot be met for the want of funds, and it is also a question whether a great public charity like the infirmary should have this additional burden thrown upon it.

Aerial Sanitation.

In the course of his annual report the chemist and analyst of the city of Glasgow draws attention to the part which domestic fires play in the contamination of the atmosphere of the city. He maintains that either through faulty construction or careless firing these contribute substantially to the pollution of the air and to the resulting blackened appearance of the public buildings of the city. From a series of experiments extending over several months it was found that every million cubic feet of chimney gases from an ordinary domestic fire contained 5·4 pounds of heavy oily hydrocarbons. These hydrocarbons were practically solid at ordinary temperature, black in colour, and when liquefied possessed properties akin to a heavy oil tenaciously adhering to stonework. To impart a practical conception as to the importance of these 5·4 pounds per 1,000,000 cubic feet he calculated that on the basis of there being 130,000 inhabited houses within the Parliamentary boundary of Glasgow and that in each house one fire was kept burning

for a period of 12 hours, the domestic chimneys within the city of Glasgow in the aggregate discharge 31 tons of these heavy oily hydrocarbons daily.

Six Generations of Medical Men.

By the death of Mr. Robert de Bruce Trotter, which took place at his residence in Perth last week, the medical profession has lost an interesting personality. Born in Dalry, Galloway, 74 years ago, he was the son of Dr. Robert Trotter and belonged to a well-known family of medical men, the deceased being the sixth generation of doctors. He was educated at the University of Glasgow and finally settled down in Perth where he rapidly built up an extensive practice. For 20 years he acted as medical officer to the General Post Office, Perth, and he was a past president of the Perthshire branch of the British Medical Association. He also served in the Perth town council. A man of considerable literary ability, he was the author of several books on Galloway folklore. He is survived by a widow and grown-up family.

Reconstruction of Perth Royal Infirmary.

In connexion with the scheme for the reconstruction of the Perth Royal Infirmary the directors have now been promised £9000, and if another £1000 are subscribed before the end of the year the condition upon which the directors were promised £5000 by two prominent citizens will have been fulfilled and the reconstruction scheme may then be proceeded with. It appears, however, that a good many people in the city and county would prefer the erection of a new infirmary upon a larger and airier site. For this at least £20,000 will be required—that is, £20,000 more than the sum required for reconstruction. In this connexion the directors state that Mr. Weir of Kinmouth has generously offered to subscribe £1000 towards the erection of a new infirmary if a sum of £19,000 is raised for that purpose before the end of January.

Montrose Asylum Appointments.

At a meeting of the managers of the Montrose Asylum and Infirmary held on Dec. 3rd Dr. William Leggett, at present engaged in the Kent County Asylum, Barming Heath, was appointed senior medical assistant in the Montrose Royal Lunatic Asylum at a salary of £200. Mr. Charles W. Coghlan was at the same time appointed to the position of junior assistant medical officer at Sunnyside Asylum at a salary of £125 in succession to Mr. Harvey MacKay, resigned.

Gift to the Library of the University of Aberdeen.

Mrs. Phillips, widow of the late Dr. C D. F. Phillips, LL.D., of the University of Aberdeen, and lecturer on materia medica and therapeutics in Westminster Hospital, London, has sent to the librarian of the University of Aberdeen library 50 copies of Dr. Phillips's work on "Materia Medica, Pharmacology, and Therapeutics" (third edition, 1904, 24*s*.). These are to be disposed of to students at the nominal price of 3*s*., the amount realised to be spent on Phillips's Pharmacological Library, which is at present being fitted up in a separate apartment in the University library in memory of Dr. Phillips, and which will be known by that name. In addition to all the books possessed by the University, this library will contain portraits of all those who have taught on the subject in Aberdeen since 1818. Several of these have already been procured and a large oil painting of Dr. Phillips himself, the work of Mr. T. H. Walker and the gift of Mrs. Phillips, holds a prominent place on the walls.

Dec. 10th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Notification of Births Act in Dublin.

AT the last meeting of the corporation of Dublin the Lord Mayor moved the adoption of the Notification of Births Act. Dr. J. C. McWalter opposed the motion and the question was eventually postponed for one year.

The Tuberculosis Exhibition in Ireland.

The Tuberculosis Exhibition which recently travelled from Dublin to Belfast has been open for a period of 12 days in the latter city, and during that time it was visited by 43,000 people of all classes of society. During the second week of its sojourn in Belfast lectures were delivered by Professor J. A. Lindsay, Dr. W. Calwell, Professor W. St. C. Symmers, and Dr. F. H. Sinclair. The exhibition opened in Lisburn on Dec. 9th and will be in Lurgan for a week beginning Dec. 16th. The practical value of the work that it is doing in Ireland is certainly very great.

Ballymena Cottage Hospital.

At the annual meeting of the friends and subscribers of this charity on Dec. 4th it was reported that extensive alterations had been made costing £760, which had been entirely subscribed by friends of the institution without any appeal to the public. The income for current expenses was £452 7*s*. 4*d*. and the expenditure was £387 6*s*. 10*d*., leaving a balance of £65 0*s*. 6*d*. 78 intern and 48 extern cases were treated.

Hospital Accommodation for Infectious Disease in Belfast.

A conference between the public health committee of the city of Belfast and a special committee of the board of guardians was held in the City Hall, Belfast, on Dec 4th in reference to hospital accommodation for the treatment of infectious disease. The points discussed were (1) the desirability of having only one establishment for the treatment of all notifiable fever cases; (2) how can this be accomplished; and (3) on what terms can it be carried out. As to (1) it was recommended that there should only be one hospital for the treatment of infectious disease; as to (2) that the corporation should have all notifiable cases of infectious diseases removed to the infectious hospital at Purdysburn. It was suggested that as the cost of maintenance of cases now treated in the union fever hospital was 9*s*. 5*d*. per week per patient the guardians should pay the same amount to the corporation per patient sent in the future to Purdysburn infectious hospital through relieving and dispensary officers. During the four weeks ended Nov. 30th 162 cases of infectious disease were notified in Belfast—viz., 41 scarlet fever, 22 diphtheria, 27 typhoid fever, and 32 erysipelas, while during the same period in Dublin from similar maladies there were 120 notifications. In Belfast there were 41 notifications of scarlet fever, as against 19 in Dublin. At present a very widespread epidemic of measles is raging in Belfast.

Dec. 10th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Gout.

AT a recent meeting of the Berlin Medical Society Dr. Falkenstein read a paper on the Treatment of Gout by Hydrochloric Acid. He said that gout was caused by a diminished secretion of hydrochloric acid in the stomach, a condition which was of a primary nature and not, as in cancer, anæmia, and leukæmia, of a secondary nature. He had administered in gout from 50 to 60 drops of concentrated hydrochloric acid daily. When taken sufficiently diluted and together with the food these large doses were unobjectionable because the hydrochloric acid was at once neutralised by the alkaline and albuminous substances contained in the food. The acid must be taken continuously for years and not only during a gouty attack. In mild cases of gout complete recovery has followed an early administration of the remedy. In chronic cases the patient's general state was improved but although some slight attacks might be benefited through the acid hindering the formation of new deposits, it nevertheless had no effect on those already existing. In the discussion Professor Kraus confirmed the statement that gouty inflammation might be relieved by the administration of hydrochloric acid during the interval between attacks, but that it was useless to give it during the progress of an attack.

Treatment of Neuralgia.

Dr. Schlesinger read a paper on the Treatment of Neuralgia by injecting ten cubic centimetres of a solution of chloride of sodium of 0·8 per cent. strength at the painful points. In sciatica the injection was made at the place where the nerve issued from the pelvis. The method had proved successful in 56 cases, of which six were acute and the remainder were chronic. In the discussion Dr. Poritz said that he had obtained good results by the injection of various substances such as alcohol or oil or a concentrated solution of chloride of sodium. Alcohol was especially efficacious in neuralgia of the trigeminus.

Abdominal Sarcoma.

At a recent meeting of the Demonstrationsgesellschaft Dr. Albu showed specimens obtained from two cases of abdominal sarcomatosis. One patient was a woman 35 years of age who sought advice a fortnight previously on account of pains in the stomach, anorexia, and constipation. On palpation a large growth was found in the gastric and hypochondriac region. An operation was accordingly performed and multiple growths in the liver were discovered. The place of the primary growth was not ascertained. The second patient was a man aged 28 years who suffered three weeks previously from gastro-intestinal pains. Ascites was found to be present and after the withdrawal of nine litres of fluid by puncture a large growth in the gastric region was found by palpation. Paracentesis was frequently repeated, but the patient died five weeks after the first appearance of the symptoms. At the necropsy an enormous growth was found in the abdomen, including the stomach, the pylorus, the omentum, and the pancreas; microscopically it was a necrotic lymphosarcoma. The peculiarity of these cases consisted in their extremely rapid development. This point was especially valuable for the diagnosis when compared with the relatively slow development of carcinoma. The presence of sarcoma might, moreover, be suspected from the comparatively early age of the patients, from the smoothness of the growths, and from the rise of temperature produced by their rapid necrosis.

The Functions of the Tonsils.

At a meeting of the Verein für Innere Medicin Dr. Barth read a paper on the Physiology of the Tonsils and on the Indication for their Removal. He said that the tonsils being lymphadenoid organs had the same physiological function as the lymphatic glands—namely, to retain toxic substances which have entered the organism and to produce leucocytes. From their situation they were, moreover, able to discharge lymph into the pharyngeal cavity, a fact which might be of importance for the digestive process. Experiments have proved that bacteria and coloured substances, such as carmine, &c., injected into the blood reappeared in the tonsils and were discharged by them into the palatal cavity. Bacterial infection of the tonsils might therefore be produced either by an immigration of bacteria from the mouth into these organs or by their emigration from the circulation. The tonsils acted as protective organs by a filtration and excretion of toxic substances. Hypertrophy of the tonsils meant an increased activity of the functions. In childhood their protective action was especially energetic and they were liable to hypertrophy, whereas after the body had attained its full development they underwent involution. Removal of hypertrophied tonsils was indicated only when they interfered with respiration or encroached on the nasal cavity. Inflamed tonsils or those containing calculi or detritus within the crypts must also be removed, because they were unable to perform their function. Total removal of the tonsils should be avoided, a portion of the organ being always left. In the discussion Dr. Langstein said that hypertrophy of the tonsils must be regarded as a symptom of a general exudative diathesis. It might be produced by over-feeding, whilst, on the other hand, vegetarian diet had a tendency to make the tonsils atrophy. He mentioned cases in which leukæmia has been a sequel of their removal, a fact by which the importance of the tonsils for the formation of the blood is shown.

The Auguste Victoria House.

The foundation stone of the Auguste Victoria House, a new institute for combating the mortality of infants, was laid on Dec. 3rd. It differs from other institutions of a similar kind in one respect—namely, that it is not destined to meet local needs but will be a scientific centre for the study of infant feeding and will include a laboratory and a clinical department. The plan of this establishment was drawn up by the well-known Dr. Biedert of Strasburg in Alsace 20 years ago, but through lack of means it could not be carried out till upon the occasion of the silver wedding of the German Emperor and Empress in 1906 funds were collected which were appropriated by the Emperor to the above purpose. Pregnant women will be received in one department of the house three months previously to their confinement and will be delivered in the lying-in department, where they will stay for a fortnight. After that time mothers who suckle their children will be received in the "mother's home" for three months where they will be under the control of the medical staff of the institution. Children who cannot be suckled by their mothers because the latter are either ill or unable to stay long in the institution will be admitted to the "mother's home" to be suckled by the women living in the home or else to the department for artificial feeding, where also the infants of mothers confined outside the house may be received. Special departments will be provided for sick infants, but, of course, only for those suffering from troubles of the digestive organs. After the mothers and infants have been discharged from the house they will receive advice and will be kept under observation till the end of the second year at a dispensary connected with the house, where also advice will be given gratuitously to any mother belonging to the indigent classes who may present herself and her infant. To obtain good milk, arrangements have been made for keeping a number of cows which will be under the care of a veterinary surgeon connected with the house. Large laboratories for the study of infant feeding and lecture-rooms are to be provided and also a training-school for nurses. Dr. Keller of Breslau has been appointed director of the house. Efforts to reduce infantile mortality are very necessary, the death-rate for infants being extremely high in Germany. Thus the infantile death-rate per 100 is 7·6 in Norway, 10·0 in Ireland, 11·2 in Denmark, 12·0 in Scotland, 13·7 in Holland, 14·0 in Switzerland, 14·4 in France, 14·6 in England, 15·2 in Belgium, and 16·1 in Italy. In Germany, however, it is 19·6, this number being surpassed only by the death-rate of 20·9 in Austria and 21·2 in Hungary.

Health of the German Army.

A report on the health of the army covering the period from Oct. 1st, 1904, to Sept. 30th, 1905, has lately been issued by the Army Medical Department. This report is rendered specially valuable by the comparative tables showing the state of affairs during the past 32 years and the improvement during that time. In 1873–74 the death-rates per 1000 were 5·6 from diseases, 0·60 from accidents, and 0·50 from suicide, giving a total of 6·7 per 1000. In 1904–05 the respective number of deaths per 1000 was 1·3 from diseases, 0·32 from accidents, and 0·39 from suicide, the aggregate being 2·0 deaths per 1000. The death-rate has thus fallen from 6·7 per 1000 to 2·0 per 1000, being a decrease of 70 per cent. This success has been obtained not only by the progress of medicine in general, and especially in the prevention of infectious and epidemic diseases, but also by the better training of the army medical officers and the improvement of the military hospitals. In 1904–05 of the 525,717 men belonging to the army 106,494 men were admitted to hospitals and 331,599 to the sick rooms in the barracks (*Revierkrankenstube*). Venereal diseases have again decreased, as in the previous year.

Dec. 10th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Calmette's Ophthalmic Reaction in Tuberculosis.

Dr. Henri Audeod has investigated Calmette's reaction in 31 cases at the Geneva Children's Hospital. Out of 13 tuberculous cases a positive reaction failed to be obtained only in one; this referred to a child affected with cutaneous tuberculosis in full process of healing after a curettage. In three suspicious cases one reaction was obtained; 15 non-tuberculous cases gave negative results. As these observations were too limited in number to allow of general deductions Dr. Audeod collected the results of statistics so far published by 11 medical men referring to 611 cases. In 261 tuberculous cases the reaction was absent in only 14, it proved positive in 38 out of 47 suspicious cases, and it was negative in 278 out of 303 non-tuberculous cases. Dr. Audeod considers its utility proved, especially for the investigation of suspicious cases; he lays stress on its innocuity. It is easily executed. One drop of a solution of one-twelfth of a grain of dry tuberculin in ten drops of water if dropped into the conjunctival sac produces an inflammatory reaction of the eye lasting from 18 to 36 hours.

Invagination Produced by a Meckel's Diverticulum.

Dr. von Mandach of Schaffhausen publishes one of these rare cases. The patient was a healthy boy, aged two and a half years who fell ill with slight dyspeptic symptoms,

vomiting, and diarrhœa. For the first five days the temperature was normal but it rose on the sixth day to 100° F. The bowels still moved and there was a great deal of discomfort and uneasiness. On the seventh day serious symptoms supervened; the bowels did not act, vomiting again came on, meteorismus developed, the liver dulness disappeared, whilst the temperature remained under 100° F., and the pulse rose from 86 to 100 and got rapidly weaker. An exact diagnosis could not be made. An exploratory laparotomy revealed the following condition. A Meckel's diverticulum was doubly invaginated; locally there were symptoms of peritonitis. The invagination readily yielded to digital manipulation. As the patient was very much collapsed Dr. von Mandach did not venture on a resection of the bowel but reduced the orifice of the diverticulum to a minimum and sutured its base to avoid a return of the invagination. The patient made an uninterrupted recovery and left the clinique in three weeks; he continues well. Professor Wilms in an extensive article on Meckel's diverticulum in the *Deutsche Chirurgie* reports only a dozen cases. Dr. A. Taeck has recently added a thirteenth. Only three patients recovered by means of operative interference. Thus it is desirable to place every case on record.

Professional Fees for attendance on Medical Men's Families.

As a general rule medical men never think of charging a fee for attendance on their colleagues or their families (wife and children). The acknowledgment comes in counter-services rendered or in the shape of a present on a suitable occasion. This is the custom in Switzerland. A year ago, however, a medical man made a proposition which has slowly been gaining ground and is finding more favour with the parties concerned who are both pleased that some sufferers should profit by the services gladly rendered and thankfully accepted. The plan consists in sending a fee corresponding to the services received from the colleague to the Medical Aid Association (Hülfskasse), which has enough to do to assist a score of widows and orphans of medical men left suddenly without sufficient resources. Thus the sum of about £600 which the Swiss Medical Aid Association annually distributes may be considerably increased. This plan seems worthy of imitation.

Dec. 7th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Nature-study in Rome.

THE address which of all others delivered at the opening of the academic year in the University of Rome produced the deepest impression was that of the professor of natural history in the medical school, Dr. Mario Cermenati. His theme was "I Problemi dell' Universo e le Meraviglie della Vita" (the Problems of the Universe and the Marvels of Life), and its effect was to show, in reference to recent developments in another quarter, that "obscurantism" could not live in the atmosphere of nature-study. Beginning with the triad of evolutionists, Lamarck, Darwin, and Haeckel, he indicated the contributions made by each to the solution of the great problem of our day, the origin and development of man in relation to his surroundings. But these pioneers themselves were the creatures of evolution, in illustration of which he dwelt on the history of that theory, and found the first beginnings of it in the "nature poets" of Magna Græcia, as Southern Italy was called. Slowly making way their ideas found monumental expression in the words of the Imperial philosopher Marcus Aurelius who, apostrophising Nature, said—

ἐν σοὶ πάντα, ἐκ σοῦ πάντα, εἰς σὲ πάντα

("In thee are all things, out of thee are all things, into thee return all things"). Gradually, by undercurrents bursting forth from time to time into the light of day, only to be suppressed and once more to resume their silent, unseen course, these ideas reappeared at long intervals, always gaining in distinctness and force, till in the eighteenth century Lamarck, in the nineteenth century Darwin, and now in the twentieth century Haeckel brought them more and more within the sphere of experimental science. Appealing to the "patriotism" of his audience, Professor Cermenati next quoted Haeckel to show that it was in Italy, and precisely in that "paradise of zoologists," the Straits of Messina, that the German nature-student made those studies which convinced him of the cogency of the "Darwinian conception"—a field cultivated towards similar ends by other investigators and thinkers from the Fatherland, prominent among whom were Goethe and Johann Müller. Even in the later decades of the last century Rome herself, in her reconstituted university, had attracted the northern nature-student to study and to teach side by side with the Italian, a fact illustrated by reference to the tenure of a biological chair by such a master as Moleschott. Proofs, all these, of the brotherhood of science which knows no ostracism or *chauvinisme*, which Italy herself will confirm when on Feb. 16th next she joins in the congratulations of the scientific world to Haeckel on his reaching his seventy-fourth birthday, and 15 months hence when she takes similar occasion to show her gratitude to Darwin on the celebration of the first centenary of his birth. "Let us to-day do homage," Professor Cermenati concluded, "to the memory of Charles Darwin; to that of Jean Lamarck, to whom a monument will soon be unveiled in Paris amid the applause of all nature-students throughout the world; and to that of Wolfgang Goethe, whose statue Rome cherishes—the poet who, inheriting the lyre of Empedocles and Lucretius, became to Haeckel what Virgil was to Dante and whose most distinctive utterance swells the refrain of all biological research:—

Was kann der Mensch im Leben mehr gewinnen
Als dass sich Gott-Natur ihm offenbare?"

In a separate form Professor Cermenati's eloquent discourse will soon be made *publici juris*.

Ankylostomiasis in Sulphur Mines.

The "Regio Corpo delle Miniere" has been making active efforts to combat this special malady of underground labour in tunnels and sulphur mines. The results of experiments instituted by Dr. Manouvrier of Valenciennes appear to show that immunisation from the disease may be obtained by the free use of chloride of sodium—an essential of diet, be it remarked, which is taxed in Italy and in consequence too sparingly consumed by the class from which the miners are recruited. Under Dr. Manouvrier's guidance preparatory studies in this treatment have been prosecuted in the Romagna and with a success sufficient to encourage the repetition of the experiments on a more extensive scale. Accordingly, Signor Lacava, the Finance Minister, at the instance of his colleague of the Department of Agriculture, Industry, and Commerce has "exempted from taxation" (which means, "supplied gratuitously") a large quantity of chloride of sodium, provided with which the immunisation commission is now actively at work. From the Romagna the treatment will be extended to other centres of the sulphur industry—to Sicily in particular where, in varying proportions as to incidence and intensity, ankylostomiasis is epidemic in the "zolfatare" (sulphur mining districts).

Malaria in Upper Italy.

Still in the direction of State-aided hygiene, large quantities of quinine have been supplied by the Finance Minister to the region watered by the Ticino and the Po where, as a sequela of the autumn floods, there has been a recrudescence of malaria coincident with such pauperisation of the local authorities, municipal and communal, that purchase of the drug has become well-nigh impossible. The "Direzione Generale di Sanità," through its emissaries or officers on the spot, undertakes the distribution of the quinine in the form of "cioccolate" (chocolates) in which it has been found more easy of administration.

Dec. 9th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Rockefeller Institute Farm for Medical Research.

THE Rockefeller Institute for Medical Research of New York has taken an important step in perfecting its facilities for accurate and extensive work by purchasing a farm for the collection, rearing, and cultivation of a great variety of animals for experimentation. To make the scientific work of such an institute what it should be requires a large variety of animals, under proper care and feeding, to meet special conditions, and an adequate supply to meet every want and emergency which may arise. The authorities of the institute purchased the farm in the State

of New Jersey, instead of New York, to avoid the opposition of the Society of Antivivisectionists which has been active in its efforts to secure the adoption of laws by the New York Legislature against vivisection. The farm has already been partially stocked. The grounds are being prepared and buildings erected adapted to a great variety of animal life, the purpose being to study heredity as well as disease as illustrated in the animal world. The farm consists of 97 acres.

Loss through Meat Inspection.

Solicitor McCabe, of the United States Department of Agriculture, states that the value, if healthy, of the carcasses destroyed for food by Federal inspectors during one year is more than $2,500,000. Dr. Dyson, the chief consulting veterinarian for certain large packing houses, estimates the loss at about $3,500,000. Under the new law the number of inspectors has already been increased from 324 to 531, or about 63 per cent., and there has been a corresponding increase of the number of houses under inspection. This increase shows that under the rules in force in 1906 the actual Federal condemnation will increase with the increased number of houses inspected, and hence these estimates will increase even when viewed solely on the basis of Federal condemnation. The tendency of the law will evidently be to eliminate the most diseased animals prior to the Federal ante-mortem inspection, but there is danger that local dealers will still slaughter diseased animals which they do not dare to submit to the Federal veterinarian. There are many evidences that the proportion of tuberculous animals killed at the local slaughter-houses has greatly increased since the enforcement of the new Federal law. It is believed that State and local authorities will eventually be forced to adopt meat inspection for their own protection.

The Use of Tobacco in the United States Navy.

Surgeon-General Rixey of the United States Navy recommends in his annual report that an order should be issued by the Navy Department forbidding the use of cigarettes by all persons in the navy under 21 years of age. It is stated that the crew of one battleship, consisting of 700 men, used in three months 1500 books of cigarette-papers, 1200 pounds of smoking tobacco, and 37,000 cigarettes A ship about to leave the Brooklyn Navy Yard was recently supplied with the following materials for its crew: 48,000 cigarettes, 1500 pounds of candy, 1000 pounds of navy plug chewing tobacco, and 30,000 cigars. These articles comprised a part of the canteen supply.

Race Suicide.

President Roosevelt has excited public interest by his frequent allusion to the diminishing birth-rate in the native population of this country and his vigorous protests against what he terms "race suicide." A recent writer who has made a special investigation of the subject confirms, with rather startling statistics, the contention of the President. It is estimated by this writer that there are probably 2,000,000 American homes without a child. In Massachusetts, a State which keeps very trustworthy statistics of its population, one in six of its homes is without a child. A century ago it was estimated that children formed one-third of the total population of the country. According to the last census there were about 18,000,000 children in the country, which would be less than one-fourth of the population. The difference between one-third and one-fourth means a loss of 7,000,000 children to the population.

The Philippine Medical College.

The growth of this medical school is very gratifying. The Philippine Commission has recently appropriated the following sums for its support—viz., $33,620 for salaries and wages; $26,574 for contingent expenses; $720 for maintenance of internes; $280 for clinical apparatus; and $12,500 for endowment of beds in hospital. It is now proposed that a school of midwifery should be established in connexion with the school. A new hospital is being erected in connexion with the school at an expense of $390 000, in which there is to be a maternity ward fully equipped for practical instruction.

Nov. 23rd.

PLYMOUTH PUBLIC DISPENSARY.—The 109th annual report of the Plymouth Public Dispensary has just been issued and shows a continued record of useful work. There is an unfavourable balance of £80 at the close of the 12 months and the committee hopes that the residents of the "Three Towns" will soon subscribe that amount.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The following appointments have been made: University lecturer in advanced human anatomy, Dr. E. Barclay-Smith; member of Financial Board, Dr. H. K. Anderson; members of State Medicine Syndicate, Dr. W. H. Gaskell, Dr. L. E. Shore, and Mr. W. M. Fletcher; member of Special Board for Medicine, Dr. Gaskell; and member of Board of Anthropological Studies, Dr. F. H. H. Guillemard.—The following degrees were conferred on Nov. 21st and 30th:—

M.D.—E Ward, Clare.
M.B.—W. L. Cripps and C. A. W. Pope, Trinity; F. A. Barker and R. B. Lloyd, Emmanuel.
B.C.—A. S. B. Bankart, Trinity; and R. Davies-Colley, Emmanuel.

The following have been appointed additional examiners for medical degrees: Pathology: Professor G. Sims Woodhead. Pharmacology: Professor Marshall of the University of St. Andrews. Medicine: Dr. F. Parkes Weber and Dr. P. Horton-Smith-Hartley. Surgery: Mr. F. J. Steward, Guy's Hospital.—Mr. W. Bateson, M.A., St. John's College, has been appointed to the readership in zoology for five years.—Mr. F. P. Jepson of Pembroke College has been elected to the research studentship in medical entomology, in place of Mr. A. H. Lees who has resigned.

UNIVERSITY OF LONDON.—At examinations held recently for the B.Sc. degree the following candidates passed in Honours in the subjects indicated:—

EXTERNAL STUDENTS.

Chemistry.—First Class: Douglas Rous Edwardes-Ker, Brasenose College, Oxford; and Evan Skull Poole, Royal College of Science. *Second Class:* Guy Barr, Christ's College, Cambridge; Frederick Frank Beach, Brasenose College, Oxford, and private study; John Howard Brown, University Tutorial College and private study; Howard Alfred Caulkin, University of Birmingham; Horace Barratt Dunnicliff, Downing College, Cambridge, and private study; Joseph Kenyon, Blackburn Municipal Technical School; Harold Richard Norton, University of Birmingham; John Read, University of Zürich; and Herbert Stanley Redgrove, the Polytechnic. *Third Class:* Edward Bertram Anderson, University of Birmingham and private study; Bertram Haward Buttle, East London College; Frederick Challenger and Percy Watson Copeland, Derby Technical College; Richard Henry Greaves, University College, Cardiff; Victor George Jackson, private study; Charles Meades, University College; William Henry Hobbs Norris, Battersea Polytechnic and Corpus Christi College, Cambridge; and Claude Vazeille Temperley, Universities of Bonn and Manchester.

Botany.—Third Class: Gladys Maude Caplen, Hackney Technical Institute; and Kathleen Mary Cole, Marguerite Hankinson, and Annie Atkinson Irving, University College Bristol.

Zoology.—First Class: Richard Williams Harold Row, Royal College of Science and King's College. *Second Class:* Rowland Southern, Royal College of Science, Dublin, and private study.

Physiology.—First Class: Henry Pratt Newsholme, University of Oxford and private tuition; and John Thompson, Victoria University of Manchester.

INTERNAL STUDENTS.

Chemistry.—First Class: William John Gale, King's College. Edward John Godfrey, Birkbeck College; Thomas Percy Hilditch; University College; Harold Mountain, Royal College of Science; William Thomas, East London College; Herbert Edmeston Watson, University College; George Stafford Whitby, Royal College of Science; and Thomas Field Winmill, East London College. *Second Class:* Charles John Casey, King's College; Evelyn Ashley Cooper and Edward Gordon Couzens, Royal College of Science; Mary Cunningham and Alfred Charles Dunningham, University College; Gilbert Arthur Freak, South-Western Polytechnic; Alexander Milne Hird and Thomas Jackson, Royal College of Science; Alan Thomas Mabbitt, East London College; Joseph Allen Pickard, Royal College of Science; Arthur Olivier Pickering, Birkbeck College; and Norman Walker, East London College *Third Class:* Maurice Noel Lacell, East London College; Benjamin Dawson Porritt, University College; and Victor Maurice Weil, East London College.

Botany.—Second Class: Mary Taylor Fraser, South-Western Polytechnic; and Elizabeth Graham Hearn and Edward James Salisbury, University College. *Third Class:* Hilda Mary Hall, University College; Theodora Alice M. Lockhart, Royal Holloway and Bedford Colleges; and Irene Dorothy Poulter, University College.

Zoology.—Second Class: Alice Winifred Hill, King's College.

Physiology.—First Class: Francis Martin R. Walshe, University College.

Psychology.—Second Class: Robert Kerr, King's College.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

THE editor of the *General Practitioner* informs us that the treatment of cancer by the pancreatic ferments, trypsin and amylopsin, as suggested by Dr. J. Beard, will be dealt with in a special number of that publication to be issued on Dec. 21st next. The issue, we are told, will contain original articles by Dr. Beard and others, also reports of cases treated at home and abroad.

THE EXETER CARNIVAL.—As a result of the recent Exeter carnival the sum of £115 has been distributed amongst the medical charities of that city.

THE UNIVERSITY OF SHEFFIELD.—Dr. Arthur J. Hall has been elected by the Council of the University to the post of lecturer on Practical Medicine rendered vacant by the resignation of Dr. W. Tusting Cocking.

RECEPTIONS BY THE LORD MAYOR OF LIVERPOOL.—The Lord Mayor of Liverpool (Dr. Richard Caton) and the Lady Mayoress held their first receptions at the town-hall on Dec. 5th and 6th. The gatherings were particularly brilliant and upwards of 2000 guests attended. A feature of the entertainments was the large number of medical men invited. The matrons of all the hospitals and leading charities also received invitations, most of whom were able to avail themselves of the Lord Mayor's hospitality, having a choice of days. Music was provided in the vestibule by the band of the Liverpool constabulary and in the large ball-room by Mr. T. Shaw's orchestra. Masses of flowers were everywhere displayed with great taste. The large number of leading citizens who attended was a welcome indication of the regard and esteem in which Dr. Caton is held by the people of Liverpool. The Lord Mayor entertained Sir Alfred Keogh, K.C.B., at luncheon at the town-hall on Dec. 10th and afterwards presided at a meeting of the local Volunteer medical staff convened to discuss the medical aspects of the new Territorial Army Act and to hear an address on the subject by Sir Alfred Keogh. The meeting was largely attended by Volunteer medical officers and others interested in the matter

GLASGOW UNIVERSITY CLUB, LONDON.—The usual winter dinner of this club was held in the Trocadéro Restaurant on the evening of Dec. 6th, under the presidency of Professor J. Ferguson, M.A., LL.D., F S.A. There was a large attendance of the members and their friends and the event was in every sense very successful. Amongst those present were Sir William Ramsay, K.C.B., Mr. Otto Hehner, Dr. Chalmers Mitchell, Dr. G. A. Heron, Dr. A. B. Seton Orr, Lieutenant-Colonel W. B. Leishman, R.A.M.C., Lieutenant-Colonel R. J. Geddes, R.A.M.C., D.S.O., Professor Norman Collie, Professor D'Arcy Thompson, Professor J. M. Thomson, and Professor W. P. Ker. In proposing "The University and the Club," the chairman sketched some of the changes which had occurred in the University since his succession to the chair of chemistry some 35 years ago. Whilst in some of these he found room for criticism he had confidence that the general movement had been one of progress, and he found one of the best evidences of this in the educational and material prosperity which existed at the present date. He expressed his interest in the club as an institution which helped to keep alive in its members the traditions of their *alma mater* and promoted fellowship and mutual goodwill. The toast of "The Guests" was proposed by Sir W. Ramsay and called forth a highly successful reply from Professor D'Arcy Thompson, while the health of "The Chairman" was enthusiastically pledged on the call of Professor J. M. Thomson. The programme included a number of songs by Mr. W. L. Cockburn and others, as well as some amusing stories by Mr. C. J. Drummond Morier.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

APPLEYARD, JAMES, L.R.C.P.Lond., M.R.C.S., has been appointed House Surgeon at the North Devon Infirmary, Barnstaple.

BEATTIE, THOMAS, M.D. Durh., M.R.C.P. Lond., has been appointed Honorary Physician to the Royal Victoria Infirmary, Newcastle-upon-Tyne.

BOLAM, ROBERT A., M.D., B.S. Durh., M.R.C.P. Lond., has been appointed Honorary Physician to the Skin Department, Royal Victoria Infirmary, Newcastle-upon-Tyne.

BRISTOW, W. R., M.B., B.S. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

BURGESS, A. S., M.R.C.S., L.R.C.P. Lond., has been appointed Senior Ophthalmic House Surgeon at St. Thomas's Hospital.

CARLETON, H. H., M.B., B.Ch. Oxon., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

CODD, J. ALFRED, M.D., B.Sc. Lond., has been appointed Physician to the Wolverhampton and Staffordshire General Hospital.

COOKE, A. I., B.C. Cantab., has been appointed Junior Ophthalmic House Surgeon at St. Thomas's Hospital.

DAWES, H. E. T., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

DRAKE, A. W. C., M.R.C.S., L.R.C.P. Lond., has been appointed to the Throat Department at St. Thomas's Hospital.

FRANKLIN, C. L., M.B., Ch.B. Vict., has been appointed Senior House Surgeon at Oldham Infirmary.

GOWRING, B. W. N., M.R.C.S., has been appointed Honorary Surgeon to the Dorset County Hospital.

LITTLE, H. N., M.R.C.S., L.R.C.P. Lond., has been appointed to the Throat Department at St. Thomas's Hospital.

NITCH, C. A. R., M.S. Lond., F.R.C.S. Eng., has been appointed Surgeon to Out-patients at St. Thomas's Hospital.

PATEY, W., M B., B.S. Lond., has been appointed to the Ear Department at St. Thomas's Hospital.

SACHS, A. L., M.R.C.S., L.R.C.P. Lond., has been appointed to the Skin Department and to the Electrical Department and X Ray Department at St. Thomas's Hospital.

SMITH, J. B., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Hertford District of the county of Hertford.

SPARROW, E. C., M.R.C.S., L.R.C.P. Lond., has been appointed to the Children's Surgical Department at St. Thomas's Hospital.

STARKEY-SMITH, T. G., M.R.C.S., L.R.C.P. Lond., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

TIMMS, ALEC BOSWELL, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Visiting Medical Officer to the Cardiff Workhouse.

TODD, R. E., M.B., B.S. Lond., has been appointed House Surgeon to Out-patients at St. Thomas's Hospital.

VERDON, W. G. H. M., M.R.C.S., L.R.C.P. Lond., has been appointed to the Ear Department at St. Thomas's Hospital.

VISE, J. N. B., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Axminster District of the county of Devon.

WHITEHOUSE, H. B., M.B., B.S. Lond., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

WINDSOR, J. F., M.R.C.S., L.R.C.P. Lond., has been appointed to the Skin Department at St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £80 per annum, with board, washing, and lodging.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—Honorary Skiagraphist.

BRISTOL GENERAL HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, &c.

BRISTOL DISPENSARY.—Two Medical Officers.

BRISTOL, UNIVERSITY COLLEGE.—Director of the Public Health Laboratory.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, residence, and laundry.

CARDIFF UNION WORKHOUSE.—Assistant Medical Officer, unmarried. Salary £130 per annum, with rations, apartments, attendance, and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon, unmarried. Salary £80 per annum.

DERBYSHIRE ROYAL INFIRMARY.—Second House Surgeon, House Physician, and Assistant House Surgeon. Salary of two former £100 per annum, and of latter £60 per annum, with apartments, board, &c., in each case.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Salary at rate of £25 per annum, with board, residence, and washing.

EDINBURGH, UNIVERSITY OF.—Additional Examinerships in Materia Medica and Clinical Surgery.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—Clinical Assistants in the Out-patient Department.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Pathologist and Curator. Salary £100 per annum.

GROSVENOR HOSPITAL FOR WOMEN AND CHILDREN, Vincent-square, Westminster.—Junior Anæsthetist.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50, with board, residence, and laundry.

HALIFAX ROYAL INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Casualty Medical Officer. Salary £200 per annum, with lunch.

HULL ROYAL INFIRMARY.—Casualty House Surgeon. Salary at rate of £60 per annum for six months' appointment, or £80 per annum for 12 months, with board and lodging.

INDIA OFFICE, LONDON.—Sixteen Commissions in the Indian Medical Service.

LEAMINGTON, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Physician. Salary £60 per annum, with board, washing, and apartments.

LEEDS, CITY OF.—Assistant Medical Officer of Health and Chief Inspector of Nuisances. Salary £300 per annum.

LEICESTER INFIRMARY.—Assistant House Surgeon. Salary at rate of £50 per annum, with board, apartments, and washing.

LIVERPOOL HOSPITAL FOR CONSUMPTION, Sanatorium, Kingswood, Delamere Forest.—Resident Medical Officer. Salary £400 per annum, with house (unfurnished).

LONDON LOCK HOSPITAL.—House Surgeon to the Male Hospital, Soho. Salary £80 per annum, with board, lodging, and washing.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £175 per annum, with quarters, attendance

MANCHESTER, CORPORATION OF.—Assistant to the Medical Officer of Health. Salary £200 per annum.
MANCHESTER UNIVERSITY.—Senior Demonstrator in Physiology. Salary £150, rising to £200 per annum.
MELTON, SUFFOLK DISTRICT ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £160, rising to £180, with board, apartments, attendance, and laundry.
MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per year, with residence, board, and washing.
MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Honorary Radiographer.
NORTHAMPTON GENERAL HOSPITAL.—House Surgeon. Also Assistant House Surgeon, unmarried. Salary of former £90 and of latter £50 per annum, with apartments, board, washing, and attendance in each case.
NOTTINGHAM CHILDREN'S HOSPITAL.—House Surgeon (female) for six months. Salary at rate of £80 per annum, with board, lodging, and washing,
PRESTON ROYAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board washing, &c.
ST. MARY'S HOSPITAL, London, W.—Resident Casualty House Surgeon. Salary £100 per annum, with board and lodging.
ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer. Salary £105, with residence and attendance.
SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Surgeon to Out-patients.
SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with residence, board, and allowance for laundress.
SHEFFIELD, EAST END BRANCH OF THE CHILDREN'S HOSPITAL.—House Surgeon. Salary £70 per annum, with board, lodging, and washing.
SHEFFIELD ROYAL HOSPITAL.—Junior Resident Medical Officer, unmarried. Salary £50 per annum, with board, lodging, and washing.
STOCKPORT, COUNTY BOROUGH.—Medical Officer of Health. Salary £450 per annum, increasing to £550.
SUSSEX COUNTY HOSPITAL.—Honorary Dermatologist. Also Honorary Dental Surgeon.
SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £75.
WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for six months. Salary at rate of £75 per annum, with board, residence, &c.
WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith-road, W.—Clinical Assistants.
WREXHAM INFIRMARY.—Resident Medical Officer. Salary £80 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Winchester, in the county of Hants; and at Harwich, in the county of Essex.

Births, Marriages, and Deaths.

BIRTH.

KINGDON.—On Dec. 5th, at Nelson-street, King's Lynn, the wife of J. Renorden Kingdon, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

HILL—BARKER.—On Dec. 5th, at the Parish Church of Llanfor, Merioneth, by the Rev. E. Roberts, B.A., Rector, Dr. Charles Alexander Hill, M.A., M.B., of 13, Rodney-street, Liverpool, to Ethel Constance, third daughter of the late Richard Barker of Huyton.
RAWES—PERKINS.—On Tuesday, Dec. 3rd, 1907, at St. Saviour's, South Hampstead, by the Rev. H. C. Percival, Vicar of Hursley, Hants, assisted by the Rev. B. Saunders Lloyd, Vicar of Holy Trinity, Haverstock Hill, and the Rev. E. H. Wynne, Vicar of St. Michael and All Angels, Leicester, cousin of the bridegroom, Leslie Rawes, M.R.C.S. Eng., L.R.C.P. Lond., second son of James Rawes of Lisbon, to Louise Christine, only daughter of the late Richard Hopkins Perkins of Southampton, and Mrs. Perkins, 63, Haverstock Hill, N.W.
VAN PRAAGH—SHANKS.—Quietly in Hampstead on Dec. 7th, Harold John Van Praagh, M.D. Lond., son of the late Wm. Van Praagh, Esq., 11, Fitzroy-square, to Ethel Louise, daughter of the late Rev. David Shanks, D.D., Craigrownie, Cove, N.B.
VERLEY—NORFOLK.—On Nov. 16th, at the Parish Church, Halfway Tree, Jamaica, Reginald Charles Verley, M.B., Ch.B., M.R.C.S., L.R.C.P., B.Sc. Edin., to Helen, fourth daughter of the late Robert Norfolk, J.P., and Mrs. Norfolk, of Grimsby, Lincolnshire.

DEATHS.

GRAHAM.—On Dec. 5th, at 14, Old Cavendish-street, George Herbert Graham, M.D. Durh., M.R.C.S., L.R.C.P., L.S.A., D.P.H., aged 47.
JEAFFRESON.—On Dec. 1st, at Rouxville, Orange River Colony, South Africa, Alfred Ernest Jeaffreson, M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond.
MCDONAGH.—On Nov. 21st, at Malta, of typhoid fever, Reginald Charles Pattisson McDonagh, Surgeon, R.N., of H.M.S. *Cressy*, in his 25th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

EPILEPTIC CHILDREN AND THE LONDON COUNTY COUNCIL.

To the Editors of THE LANCET.

SIRS,—In the *Times* of Nov. 28th there is a report of a meeting of the Education Committee of the L.C.C. to consider the question of accommodating 319 epileptic children. No provision has yet been made for these children. The first suggestion is that a contract should be entered into with a private body of managers, who would provide an institution for the education and maintenance of these children. This, it is estimated, would entail a contribution by the L.C.C. of £11 000 in respect of capital cost alone; and this for only 200 of the 319 children involved.

The second proposal is that the Council itself should erect and maintain its own institutions.

No. 1. Institution for 120 children it is estimated would cost without land £47,121.

No. 2. Institution for 300 children, also without land, is estimated would cost £72,192. At the beginning of what may prove to be a severe and trying winter, with prices going up on all sides, this contemplated expenditure on only 319 children is not calculated to impress the London ratepayer very favourably.

May I suggest an alternative at once cheap and practical? Epileptic children do not require special accommodation. Why should not the L.C.C. hand over to the Children's Farm Home Association an equal number of healthy children free from disease now in their charge in institutions owned by the Council and thus make room for epileptic children prevented by physical reasons from enjoying free country life? The Children's Farm Home Association is a well-recognised going concern, with an organised staff of ladies trained to undertake the management of children. The association is prepared to take a practically unlimited number of children for upbringing on its farms in Canada at an inclusive charge of £16 per annum for each child handed over to it. This represents a very considerable saving when contrasted with the above figures.

The work of the association is known to many of your readers already, but for the information of those who have not followed it I would explain that His Excellency the Governor-General of Canada, the Bishop of St. Albans, and many others who have recently visited the association's farms in Canada, have publicly expressed entire approval of the work of the association, the lines upon which it is carried out, and the condition of the children. Under these circumstances it is clear that the proposal that is now put forward will not only remove a difficulty which confronts the L.C.C. but will prove of pecuniary advantage to the ratepayers and a lasting benefit to the children themselves.—Yours faithfully,

(Miss) ELLINOR C. L CLOSE,
President of the Children's Farm Home Association.

Nov. 29th, 1907.

*** We comment upon this proposal in an annotation.—ED. L.

A DISCREDITABLE ADVERTISEMENT.

To the Editors of THE LANCET.

SIRS,—I inclose you an advertisement from the *Standard* of to-day which has, I believe, appeared more than once. That a respectable paper like the *Standard* should publish such an advertisement may well excite surprise, but that it should do so without drawing any comment or censure from the medical press gives rise to greater wonder.

I am, Sirs, yours faithfully,
H. A. PERKINS, M.D. Edin.

Dec. 7th, 1907.

[INCLOSURE.]

APPENDICITIS and MEDICAL BUTCHERY.—Why be slain by costly operations when a certain cure can be obtained by natural means? A few years ago no such disease could be found in the medical vocabulary, and there is a VERY GREAT USE for the APPENDIX, the ignorance of which is a disgrace to the medical profession.

The Magnetic Auras of the human system is vital force, and can only be expounded by rarely gifted persons, who are divinely or spiritually so endowed. There is not a score of such scientific exponents of magnetic force in England to-day, but there are a thousand pretenders. Nervous breakdown results in collapse of organic function, ending in the operating table, with paralysis and death too often the result. All this can be stopped by scientific magnetic force from a gifted healer, who alone can explain the failure of Hypnotism and Static Electric batteries to attain the same results.

Professor W. H. Edwards, who has been publicly tested on every variety of disease, positively undertakes to relieve every kind of internal inflammation, often miscalled "Appendicitis," without operations of the surgeon's knife. Letters to Essex Villa, Lyndhurst-rd., Peckham, S.E.

*** We share with our correspondent his regret that English papers of good standing should now publish such advertisements, but he would not be surprised at our silence with regard to the particular

offence quoted above if he knew how frequently similar cases occur. There is hardly a lay newspaper in England now which does not in some issue or other contain advertisements as discreditable. Now and again we protest against the manifest absurdity of the claims made and paid for by charlatans, and allow ourselves to wonder how the proprietors of the journals in question can consent to receive money for the dissemination of such mischievous rubbish; but if we were to attempt to take note of all the quack advertisements which now appear in respectable papers, as well as in those of the baser sort, we should not have time for other work.—ED. L.

PRESERVED SPINACH COLOURED WITH SULPHATE OF COPPER.

A GROCER named Gilbert carrying on business in Southampton-row was recently summoned at Bow-street for selling preserved spinach to which sulphate of copper had been added in such proportions as to render it injurious to health, the evidence showing that it contained 7·47 grains of sulphate of copper to the pound. It was estimated by a witness that the consumption of one-third of a pound of the vegetable would be likely to cause illness. For the defence the representative of a wholesale firm gave evidence to the effect that they had sold the spinach by mistake, as Mr. Gilbert was usually supplied with vegetables not artificially coloured, and the defendant himself said that he had no knowledge that he was dealing in anything but the best brand of preserved spinach. He was fined £10 with £5 5s. costs.

CHRISTMAS ON THE CONTINENT.

THE Great Eastern Railway Company's British Royal Mail Hook of Holland route offers facilities for visiting Holland and Germany during the Christmas holidays. Passengers leaving London in the evening and the Northern and Midland counties in the afternoon arrive at the principal towns in Holland the following morning, Cologne at noon, Berlin, Dresden, and Basle in the evening, a corridor train, with vestibuled carriages, dining, and breakfast cars, heated by steam, being run on the Hook of Holland service between London and Harwich. Through carriage and restaurant cars are run to Berlin, Cologne, and Basle. Tickets at reduced fares will be issued to Brussels, *vid* Harwich and Antwerp, on Dec 21st, 23rd, 24th, and 26th, available for eight days. Tickets, dated to suit the convenience of passengers, can be obtained at the continental inquiry or booking offices, Liverpool-street Station.

A DISCLAIMER.

To the Editors of THE LANCET.

SIRS,—I was lately consulted about his eyes by the editor of a provincial newspaper. On his return home, being evidently unacquainted with the rules of the medical profession, he inserted a laudatory paragraph about me in his paper. I wish to say that the paragraph in question was written and inserted without my knowledge, consent, or approbation. I am, Sirs, yours faithfully,

"SEAGHAN P. MAC EWIN."

Lower Leeson-street, Dublin, Dec. 10th, 1907.

LONDON COUNTY COUNCIL LECTURESHIPS.

WE have received from a correspondent a form issued by the London County Council to be filled up by medical practitioners who desire to be engaged as lecturers to evening classes in First Aid, Health, Home Nursing, and Infant Care. The terms of appointment offer a salary of 1 guinea for each lecture of about one and a half hours' duration and there may be many suitable applicants for the posts. We do not think, however, that the Council need have offered the profession the gratuitous insult in the fifth of the "particulars of appointment," which reads: "5. Should any of the particulars furnished by the candidates in this application be found to be false within the knowledge of the candidate, or should there be any wilful omission or suppression of any material fact, the candidate will, if appointed, be liable to dismissal." This is a most unprecedented condition to be put into a application by respectable members of the community for responsible offices. When we remember the hoardings of London in the early spring it leads us to wonder whether the same clause is necessary for appointments to, let us say, committees in the London County Council. In any case this precious notice is illogical, for if a lecturer under false pretences were detected surely he should not only be liable to dismissal but dismissed.

J. G. S. F.—Our correspondent does not make his question clear. He says: "I am medical officer to the workhouse and union. Am I not justly and legally entitled to a fee of 1 guinea for giving evidence at an inquest held at the workhouse?" If the inquest is on the body of a person who did not die in the workhouse or the workhouse infirmary and who was not attended by our correspondent as medical officer our correspondent is entitled to his fee. But if the inquest is on the body of a person who did die in the workhouse or in the infirmary thereof, as we understand by a subsequent letter was the case, then we should say that according to Section 22 of the Coroners Act, 1887, he is not entitled to any fee. But we do not know that any legal decision has ever been given on the matter of such a sort that it can be regarded as forming an indisputable precedent.

Hopeful.—We have not been able to find a record of any exactly similar case; nor is there, we fear, any semi-charitable institution where it would be possible to put the patient at such a reduced fee as a guinea a week. We often have occasion to wish that such institutions existed.

Anxious.—We do not answer anonymous correspondents, nor is the question one that there is any necessity to address to us. Our correspondent can ask any medical man.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (18th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30). P.M.

THURSDAY (19th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

FRIDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golder-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (21st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (16th).—SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M.: Cantor Lecture:—Mr. C. Beck: The Theory of the Microscope.

TUESDAY (17th).—MEDICO-LEGAL SOCIETY (22, Albemarle-street, W.).—8.15 P.M.: Narration of Cases and Exhibits of Medico-Legal Interest. Paper:—Dr. T. C. Shaw: The Radical Cure—Certification of Inebriates.

ROYAL SOCIETY OF MEDICINE (THERAPEUTICAL AND PHARMACOLOGICAL SECTION) (Apothecaries Hall, Blackfriars, S.E.).—4.30 P.M.: Papers:—Dr. J. Mackenzie: The Action of Digitalis on the Human Heart.—Dr. W. Soper: Reminiscences of an Apprentice Fifty Years Ago.

CHELSEA CLINICAL SOCIETY (Chelsea Dispensary, Manor-street, Chelsea, S.W.).—8.30 P.M.: Communications:—Dr. Campbell-Thomson: A Clinical Demonstration on Some Diseases of the Nervous System (illustrated by the kinematograph).

WEDNESDAY (18th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M.: Mr. E Large: Exhibition of Selenite Specimens showing interesting Features due to Twinning. Papers:—Mr. J. Murray: Some African Rotifers.—Mr. H. M Ne.son: (1) Gregory and Wright's Microscope. (2) A Correction for a Spectroscope.

THURSDAY (19th).—CHILD-STUDY SOCIETY (Parkes Museum, Margaret-street, W.).—8 P.M.: Lecture: Miss A. Ravenhill: Some Results of an Investigation into Hours of Sleep amongst Elementary School Children in England.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (16th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. J. M. H. MacLeod: Clinique. (Skin.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—10 A.M.: Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Medical Out-patient (Dr. T. R. Whipham); Throat, Nose, and Ear (Mr. H. W. Carson); X Ray (Dr. A. H. Pirie); 4.30 P.M.: Medical In-patient (Dr. A. J. Whiting).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Sir Dyce Duckworth: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. StClair Thomson: Ear and Throat. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

HOSPITAL FOR DISEASES OF THE SKIN (52, Stamford-street, Blackfriars, S.E.).—5 P.M.: Lecture:—Mr. T. J. P. Hartigan: Tumours Malignant.

TUESDAY (17th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Clinique (Medical.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Clinique:—10.30 A.M.: Medical Out-patient (Dr. A. G. Auld). 2.30 P.M: Surgical Operations (Mr. Carson). Cliniques:—Surgical Out-patient (Mr. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M: Lecture-Demonstration:—Mr. de Prenderville: On the Administration of Anæsthetics.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. T. Hewlett: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Mr. Sargent: Nerve Anastomosis.

WEDNESDAY (18th). MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. J. Cantlie: Clinique. (Surgical.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—2.30 P.M.: Medical Out-patient (Dr. Whipham); Dermatological (Dr. G. N. Meachen); Ophthalmological (Mr. R. P. Brooks).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. F. Taylor: Medicine. 2.30 P.M.: Operations. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

THURSDAY 19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—2.30 P.M.: Gynæcological Operations (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting); Surgical Out-patient (Mr. Carson); X Ray (Dr. Pirie). 3 P.M.: Medical In-patient (Dr. G. P. Chappel). 4.30 P.M.: Throat Operations (Mr. Carson).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. G. Rankin: Medicine 2.30 P.M.: Operations. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M.: Lecture:—Dr. Hutchison: some Diseases of the Newly Born.

FRIDAY 20th). NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—10 A.M.: Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld); Eye (Mr. Brooks). 3 P.M.: Medical In-patient (Dr. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. Bradford: Medicine 2.30 P.M.: Operations. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Mr. Paton: Optic Neuritis.

SATURDAY (21st).—LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich.)—2.30 P.M.: Operations. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 12th, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 6	29·61	S.W.	...	55	45	37	36	37	Hazy
,, 7	29·67	S	0·6	57	47	37	41	42	Cloudy
,, 8	29·12	S.W.	0·47	74	57	42	55	56	Raining
,, 9	29 42	S.W.	0·10	68	52	45	46	47	Raining
,, 10	29·42	S.W.	0·39	72	51	44	42	44	Fine
,, 11	29 52	S.W.	...	59	49	44	43	44	Cloudy
,, 12	29 36	S.W.	0·42	52	46	44	46	46	Overcast

During the week marked copies of the following newspapers have been received: *-Edinburgh News, Morning Post, Exeter Gazette, Bristol Mercury, North Mail (Newcastle), South Wales Daily News, Manchester Guardian, Daily Chronicle, Huddersfield Examiner, Sanitary Record, Standard, Yorkshire Daily Post, Newcastle Chronicle, Dublin Evening Telegraph, Liverpool Courier, Daily Telegraph, Pall Mall Gazette, Manchester Daily Guardian, Hereford Times, Yorkshire Daily Observer, &c.*

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